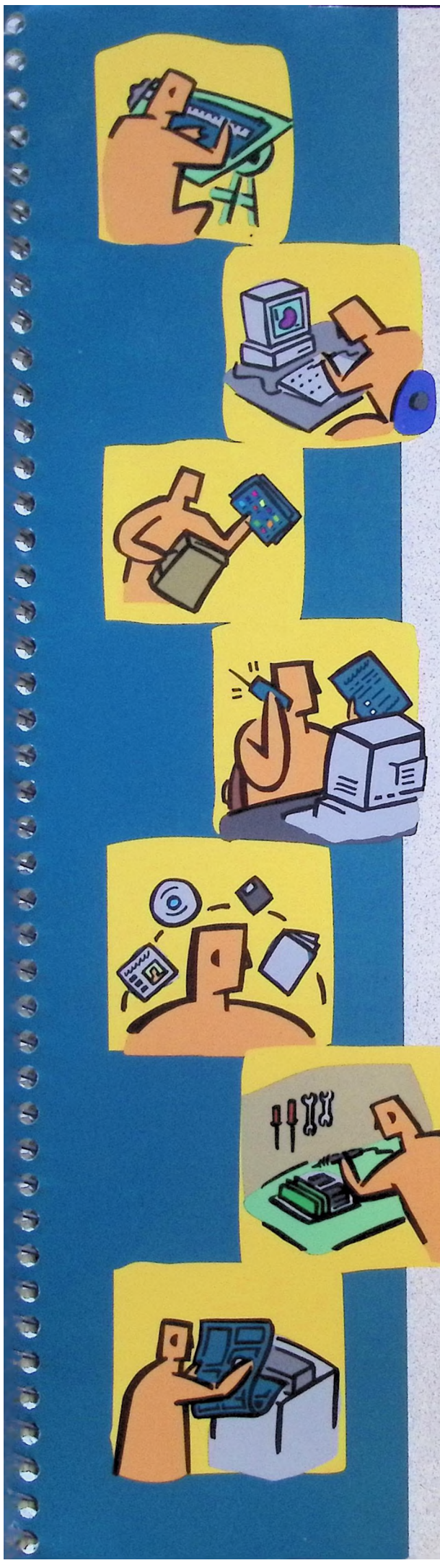

CD-ROM Included

MetaCreations PAINTER™ 6

A Digital Approach To Natural Art Media

AGAINST THE CLOCK®
PERFORMANCE SUPPORT & TRAINING SYSTEMS

Create On Your Own!

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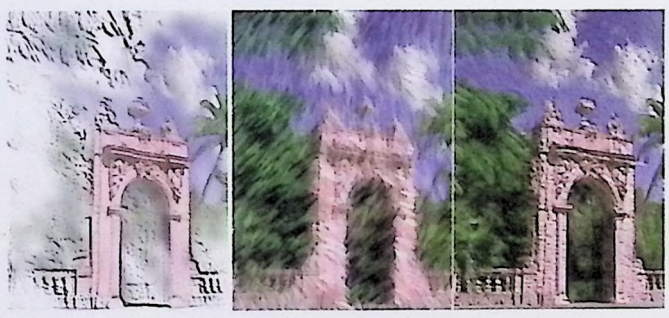

MetaCreations Painter™ 6

A Digital Approach to Natural Art Media

AGAINST THE CLOCK
PERFORMANCE SUPPORT & TRAINING SYSTEMS

PRENTICE HALL
Upper Saddle River, NJ 07458

Library of Congress Cataloging-in-Publication Data

MetaCreations Painter 6: a digital approach to natural art media
p. cm. — Against The Clock
ISBN 0-13-018884-0
1. Computer Graphics 2. Fractal design painter I. Against The Clock series.
T385.M449 2001
006.6'869—dc21

00-020060

Acquisitions Editor: Elizabeth Sugg
Developmental Editor: Judy Casillo
Supervising Manager: Mary Carnis
Production Editor: Denise Brown
Director of Manufacturing and Production: Bruce Johnson
Manufacturing Buyer: Ed O'Dougherty
Editorial Assistant: Lara Dugan
Formatting/Page Make-up: Against the Clock, Inc.
Printer/Binder: Press of Ohio
Cover Design: Joe Sengotta
Icon Design: James Braun
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Editora Prentice Hall do Brasil, Ltda., Rio de Janeiro

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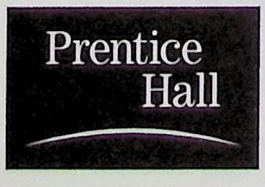

10 9 8 7 6 5 4 3 2 1

ISBN 0-13-018884-0

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Preface

Purpose

The Against The Clock series has been developed specifically for those involved in the field of graphic arts.

Welcome to the world of electronic design and prepress. Many of our readers are already involved in the industry — in advertising and design companies, in prepress and imaging firms, and in the world of commercial printing and reproduction. Others are just now preparing themselves for a career somewhere in the profession.

This series of courses will provide you with the skills necessary to work in this fast-paced, exciting, and rapidly expanding business. Many people feel that they can simply purchase a computer, the appropriate software, a laser printer, and a ream of paper, and begin designing and producing high-quality printed materials. While this might suffice for a barbecue announcement or a flyer advertising a local hair salon, the real world of four-color printing and professional communications requires a far more serious commitment.

The Series

The applications presented in the Against The Clock series stand out as the programs of choice in professional graphic arts environments.

We've used a modular design for the Against The Clock series, allowing you to mix and match the drawing, imaging, and page layout applications that exactly suit your specific needs.

Titles available in the Against The Clock series include:

Macintosh: Basic Operations
Windows: Basic Operations
Adobe Illustrator: Introduction and Advanced Digital Illustration
Macromedia FreeHand: Introduction and Advanced Digital Illustration
Adobe InDesign: Introduction and Advanced Electronic Mechanicals
Adobe PageMaker: Introduction and Advanced Electronic Mechanicals
QuarkXPress: Introduction and Advanced Electronic Mechanicals
Microsoft Publisher: Creating Electronic Mechanicals
Microsoft PowerPoint: Presentation Graphics with Impact
MetaCreations Painter: A Digital Approach to Natural Art Media
Adobe Photoshop: Introduction and Advanced Digital Images
Adobe Premiere: Digital Video Editing
Macromedia Director: Creating Powerful Multimedia
File Preparation: The Responsible Electronic Page
Preflight: An Introduction to File Analysis and Repair
TrapWise: Digital Trapping
PressWise: Digital Imposition

How to use this book

We've designed our courses to be "cross-platform." While many sites use Macintosh computers, there is an increasing number of graphic arts service providers using Intel-based systems running Windows (or Windows NT). The books in this series are applicable to either of these systems.

All of the applications that we cover in the Against The Clock series are similar in operation and appearance whether you're working on a Macintosh or a Windows system. When a particular function does differ from platform to platform, we present both.

Icons and visuals

Pencil icon indicates a comment from an experienced operator. Whenever you see the pencil icon, you'll find corresponding sidebar text that augments or builds upon the subject being discussed at the time.

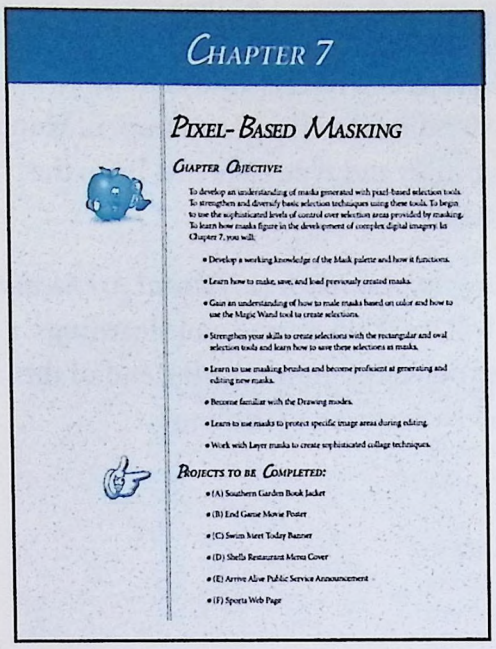
Bomb icon indicates a potential problem or difficulty. For instance, a certain technique might lead to pages that prove difficult to output. In other cases, there might be something that a program cannot easily accomplish, so we might present a workaround.

Pointing Finger indicates a hands-on activity — whether a short exercise or a complete project. This will be the icon you'll see the most throughout the course.

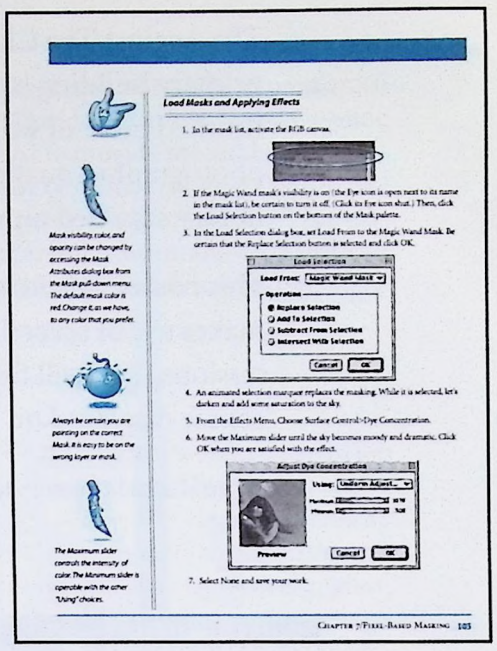
Key icon is used to point out that there is a keyboard equivalent to a menu or dialog-box option. Key commands are often faster than using the mouse to select a menu option. Experienced operators often mix the use of keyboard equivalents and menu/dialog box selections to arrive at their optimum speed.

If you are a Windows user, be sure to refer to the corresponding text or images whenever you see this **Windows** icon. Although there isn't a great deal of difference between using these applications on a Macintosh and using them on a Windows-based PC, there are certain instances where there's enough of a difference for us to comment.

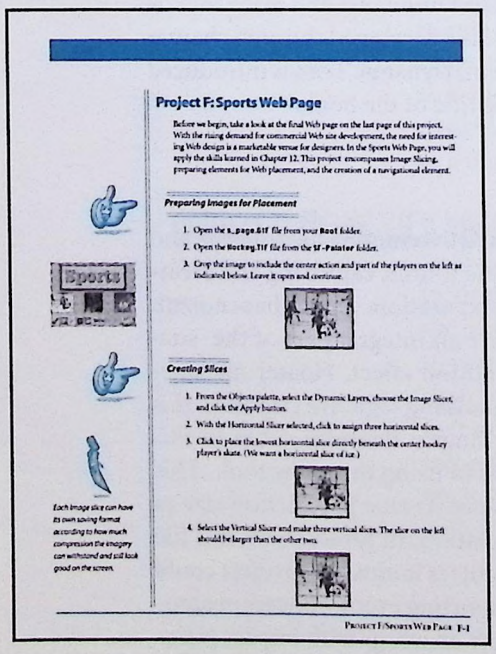
Course Walkthrough



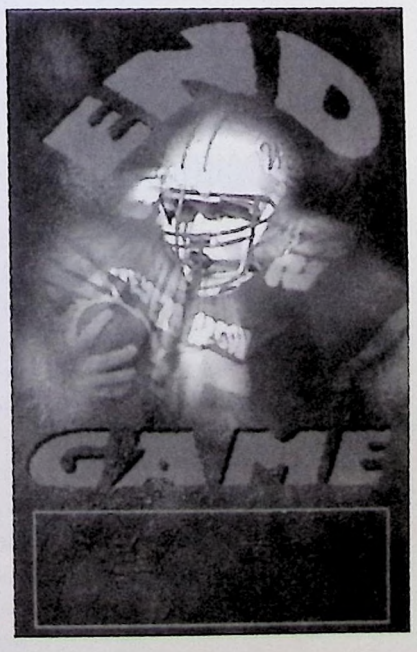
CHAPTER OPENINGS *provide the reader with specific objectives.*



SIDEBARS and HANDS-ON ACTIVITIES *supplement concepts presented in the material.*



SUPPLEMENTAL PROJECTS *offer practice opportunities in addition to the exercises.*



PROJECT ASSIGNMENTS *will result in finished artwork — with an emphasis on proper file construction methods.*

The Projects You Will Work On

The Against The Clock course materials have been constructed with two primary building blocks: exercises and projects. Projects always result in a finished piece of work — digital imagery built from the ground up, utilizing photographic-quality images, vector artwork, and type elements from the library supplied on your student CD-ROM.

This course, *MetaCreations Painter: A Digital Approach to Natural Art Media*, makes use of several projects that you will work on during your learning sessions. You will find the projects that you will complete by the end of the course displayed on the inside front and back covers of the book.

Here's a brief overview of each.

Project A: Southern Garden Book Jacket

The Southern Garden Book Jacket project requires a certain amount of experimentation with paper textures and glass distortion to finesse the background into an interesting, yet unobtrusive element. Creating and capturing a paper texture reinforces the basic skills addressed in early chapter exercises. The students will progress through an application of surface texture based on Image Luminance and clone source; a real-world application of skills developed through chapter exercises. A new text treatment, Dynamic Text, is introduced and utilized in rendering the title of the book.

Project B: End Game Movie Poster

The movie poster was designed to reinforce the concept and skills involved in using a clone source, capturing and creating paper textures, image preparation, and enhancement. Using floaters and masks are an integral part of the successful completion of the motion effect. Floater management and a strong sense of masking logic are critical to this project. The Dynamic text Plug-in floater is used in this project to reinforce the skills in using this new tool. This poster is created at a fraction of its true production size to facilitate easy image manipulation. In production, this file could easily be over 100 megabytes in size. The project could be used for a movie poster, sporting event, concert promotion or any other venue where an image with impact is important to the message.

PROJECT C: SWIM MEET TODAY BANNER

The Swim Meet Today Banner closely resembles a commercial project completed for a South Florida Aquarium Grand Opening Banner. This project is designed to provide practical skill-building in the use of floaters: the use of floaters for image repair, duplication, and frequently used production techniques. Type manipulation such as kerning, letter-adjustment, and drop shadows are stressed. The Plug-in floater, Liquid Metal, is used to simulate a water-droplet effect.

PROJECT D: SHELLS RESTAURANT MENU COVER

The Shells Restaurant Menu Cover is part of an actual design job submitted for a Florida seafood restaurant. This project showcases the effective use of type — as a 3-D element and as an original paper texture. It affords the student the opportunity to revisit skills that they have learned and gives a practical application of the skills addressed in the creation of original paper texture through capture techniques. The creation of 3-D type focuses on layer and masking skills to achieve the effect. Mosaics, tessellations, and vector art elements are used in conjunction with pixel-based imagery to create a pleasing graphic design.

PROJECT E: ARRIVE ALIVE PUBLIC SERVICE ANNOUNCEMENT

This short cartoon animation is designed to offer additional practice in the production of movies. The use of the Dynamic Text Plug-in layer introduces additional type effects that are possible to achieve with this feature. This Public Service Announcement could be used as an Animated GIF on a Web site or as a stringer in a movie theater.

PROJECT F: SPORTS WEB PAGE

With the rising demand for commercial Web site development, the need for interesting Web design is a marketable venue for designers. In the Sports Web Page project, the student will apply skills learned in Chapter 12 by completing the Web page started in the chapter's exercises. This project will encompass Image Slicing, preparing elements for Web placement, and the creation of a navigational element. The Bevel World Plug-in floater is reviewed with an emphasis on its application in Web design.

Support Materials

FOR THE STUDENT

On the CD-ROM, you will find a complete set of Against The Clock (ATC) fonts, as well as a collection of data files used to construct the various exercises and projects.

The ATC fonts are solely for use while you are working with the Against The Clock materials. These fonts will be used throughout both the exercises and projects and are provided in both Macintosh and Windows format.

A variety of student files have been included. These files, necessary to complete both the exercises and projects, are also provided in both Macintosh and Windows formats.

FOR THE INSTRUCTOR

The Instructor Kit consists of an Instructor's manual and an Instructor's CD-ROM. It includes various testing and presentation materials in addition to the files that come standard with the student books.

- **Overhead Presentation Materials** are provided and follow along with the course. These presentations are prepared using Microsoft PowerPoint and are provided in both "native" PowerPoint format as well as Acrobat Portable Document Format (PDF).
- **Extra Projects** are provided along with the data files required for completion. These projects may be used to extend the course, or may be used to test the student.
- **A Test Bank of Questions** is included within the instructor kit. These questions may be modified, reorganized, and administered throughout the delivery of the course.
- Halfway through the course is a **Review** of material covered to that point, with a **Final Review** at the end.

Acknowledgments

I would like to give thanks to the writers, illustrators, editors, and others who have worked long and hard to complete the Against The Clock series. Foremost among them are Val LeFevre, Susan Hunert, Dean Bagley, Henry Vanderlinde, and Robin McAllister whom I thank for their long nights, early mornings, and seemingly endless patience.

Thanks to the dedicated teaching professionals whose comments and expertise contributed to the success of this book, including Lorna Hernandez of the Art Institute of Ft. Lauderdale, Lori Lorion of Reedley College, Jeanne Hanson of Metropolitan Community College, and Betty Nelsen of American River College.

A big thanks to Judy Casillo, Developmental Editor, and Denise Brown, Production Editor, for their guidance, patience, and attention to detail.

I would especially like to acknowledge my husband, Ian, who was a steadfast bastion of calm and respite throughout the production of the book.

Valan Evers, February, 2000

About the Author

Valan Evers lives and plays in South Florida. She has been on the faculty of the Art Institute of Fort Lauderdale for the past 12 years. Most of the courses she teaches are in electronic imaging — either Painter or Photoshop. Her digital illustrations have appeared on magazine covers and were featured in the book, *CYBERDESIGN: Computer Manipulated Photography* by Rockport Publishers. Her work was chosen to be included in the 1999 release of the book, *Digital Photo 1*, by the prestigious publisher of fine art books, Graphis. Most of her work hangs in galleries, private, and corporate collections. She also has a limited edition of posters and postcards. Her abiding passions (besides making art) are diving, underwater photography, and mythology. She earned her Masters Degree in Computer Illustration/Underwater Photography; her thesis being digital narratives of oceanic mythology.

About Against The Clock

Against The Clock (ATC) was founded in 1990 as a part of Lanman Systems Group, one of the nation's leading systems integration and training firms. The company specialized in developing custom training materials for such clients as *L.L. Bean, The New England Journal of Medicine, Smithsonian,* the *National Education Association, Air & Space Magazine, Publishers Clearing House,* The *National Wildlife Society, Home Shopping Network,* and many others. The integration firm was among the most highly respected in the graphic arts industry.

To a great degree, the success of Systems Group can be attributed to the thousands of pages of course materials developed at the company's demanding client sites. Throughout the rapid growth of Systems Group, founder and General Manager Ellenn Behoriam developed the expertise necessary to manage technical experts, content providers, writers, editors, illustrators, designers, layout artists, proofreaders, and the rest of the chain of professionals required to develop structured and highly effective training materials.

Following the sale of the Lanman Companies to World Color, one of the nation's largest commercial printers, Ellenn embarked on a project to develop a library of training materials engineered specifically for the professional graphic artist. A large part of this effort is finding and working with talented professional artists, writers, and educators from around the country.

The result is the ATC training library.

Getting Started

Platform

The Against The Clock series is specifically designed to apply to both Macintosh and Windows systems — the courses will work for you no matter which environment you find yourself in. There are some slight differences between the two, but when you're working in an actual application, these differences are limited to certain functions and actions.

Naming Conventions

In the old days of MS-DOS systems, file names on the PC were limited to something referred to as "8.3," which meant that you were restricted in the number of characters you could use to an eight-character name (the "8") and a three-character suffix (the "3"). Text files, for example, might be called *myfile.txt*, while a document file from a word processor might be called *myfile.doc*. On today's Windows-based systems, these limitations have been somewhat overcome. Although you can use longer file names, suffixes still exist. Whether you see them or not is another story.

When your system is first configured, the Views are normally set to a default that hides these extensions. This means that you might have a dozen different files named *myfile*, all of which may have been generated by different applications and be completely different types of files.

On a Windows system, you can change this view by clicking on *My Computer* (the icon is on your desktop) with the right mouse button and choosing View>Options. From this dialog box you can choose whether or not to display these older MS-DOS file extensions. In some cases, it's easier to know what you're looking at if the extensions are visible. This is a choice based on task requirements.

To ensure that the student files are compatible with both operating systems, we've named all the files using the three-character suffix — even those on the Macintosh.

Key Commands

Key commands are fairly consistent between the Macintosh and the Windows versions of Painter. The major difference lies in the names of special function keys. The Macintosh has a key marked with an Apple and an icon that resembles a clover leaf. This is called the Command key. When you see this icon, hold this key down. The Command key is a *modifier* key; that is, it doesn't do anything by itself, but changes the function of another key pressed while the Command key is held down. A good example is holding the Command key while pressing the "S" key. This saves your work. The same applies to the "P" key. Hold down the Command key and press "P" to access the Print function to print your work.

On Windows-based systems, the Control key is almost always the equivalent of the Command key on the Macintosh. (This is sometimes confusing to new users, since the Macintosh also has a Control key, although on the Macintosh it's hardly ever used in popular applications.)

Another special function key on the Macintosh is the Option key. It too is a modifier key and must be held with another key to activate a specific function. The equivalent modifier key on a Windows system is the Alt key (for alternative). Besides these two nomenclature issues, there isn't much difference between using a Windows system and a Macintosh system (especially when you're using a particular application).

The CD-ROM and Initial Setup Considerations

Before you begin using your Against The Clock course book, you must set up your system to have access to the various files and tools needed to complete your lessons.

Student Files

This course comes complete with a collection of student files. These files are an integral part of the learning experience — they're used throughout the course to help you construct increasingly complex elements. Having these building blocks available to you for practice and study sessions will ensure that you will be able to experience the exercises and complete the project assignments smoothly, spending a minimum amount of time looking for the various required components.

In building the Student Files folders, we've created sets of data for both Macintosh and Windows users. Locate the appropriate version of the **SF-Painter** folder for your platform of choice and simply drag the icon onto your hard disk drive. If you have limited disk space, you may want to copy only one or two lesson files at a time.

Create a Project Folder

We strongly recommend that you work from your hard disk. However, in some cases you might not have enough room on your system for all the files we've supplied. If this is the case, you can work directly from the CD-ROM.

Throughout the exercises and projects, you'll be asked to save your work. Since the CD-ROM is "read-only," you cannot write information to it. Create a project folder on your hard disk and use it to store your created files. When creating your project folder, name it "Work in Progress." This will put the folder at the highest level of your system, where it will always be easy to find.

Fonts

Whatever platform you're working on — Macintosh or Windows — you must install the ATC font library to ensure that your lessons and exercises will work as described in the course book. These fonts are provided on the student CD-ROM. There is one version for Windows and another for Macintosh.

Instructions for installing fonts are provided in the documentation that came with your computer. If you're using a font utility such as Suitcase or Font Juggler, be certain to refer to the instructions that came with the font management application before installing your ATC fonts onto your system.

System Requirements

If you are running a Windows operating system, you will need to have a 486 or a Pentium-based processor; Windows 95/98 or NT 4.0 and higher; 32 MB RAM (64+ recommended); Color Display (24 bit recommended); and a CD-ROM drive.

Macintosh users need a Power Macintosh, System 8 or later; 32 MB RAM (64+ MB recommended); Color Display (24 bit recommended); and a CD-ROM drive.

Prerequisites

This book assumes that you have a basic understanding of how to use your system. Whether you're working on a Macintosh or Windows workstation, the skill sets are basically the same.

You should know how to use your mouse to point and click, and how to drag items around the screen. You should know how to resize a window, and how to arrange windows on your desktop to maximize your available space. You should know how to access pull-down menus and how check boxes and radio buttons work. Lastly, you should know how to create, open, and save files.

If you're familiar with these fundamental skills, then you know all that is necessary to utilize the Against The Clock courseware library.

Notes:

Introduction

Just when mechanical graphic arts and typography had reached an apparent state of perfection, the computer changed everything. A new breed of artist has emerged on the scene: the computer artist.

The gap between traditional art and computer art started off wide — an unfathomable abyss never to be bridged. Traditional artists wanted nothing to do with art created on a computer — as if the very fact of a computer in the equation negated the validity of the creative process. As younger artists emerge — those who grew up in a computer-literate society — the computer has become just another tool for creative expression. It is simply a more advantageous vehicle for the completion of a piece of art: commercial or fine art.

MetaCreations, always a creative leader, has seen where graphic artists and illustrators want to go and has supplied a truly brilliant tool for getting there — Painter 6. This program, more than any other application, answers the need for traditional art tools tailored to a cyber-studio.

Painter has always offered a bewildering array of natural media tools — chalks, oil colors, nubby textures, watercolor paper, and brushes, every imaginable tactile quality from a traditional art studio.

And then there are all the photographic effects only the most skilled photographers command: dodge, burn, add grain, photographic distortion, photographic color controls, and image adjustment features, to name just a few.

The Plug-in Architecture allows for effects to be created and to exist independent of the image plane. This allows for unlimited editing without marring the integrity of the underlying imagery.

Masking and selections have been improved to equal the industry standard set by Photoshop.

There is a full complement of vector-based tools such as those available in Macromedia FreeHand, Adobe Illustrator or CorelDRAW.

To round out the program there is a sophisticated animation package to create and play animations, or to use to create animations which will be imported into editing programs such as Adobe Premiere.

There are many libraries of art supplies which can be loaded into the different art supply palettes. Painter allows for and encourages the creation of custom palettes for specific types of jobs to minimize the palette clutter often associated with digital paint programs.

The Dynamic layer presents a new approach to the creation of image independent text and text on paths.

Painter 6 offers excellent Web-creation tools such as:

- an easy way to create seamless tiles
- a Plug-in to create bevelled Web elements
- the ability to do Image mapping — client- and server-side image maps
- the ability to create GIF animations
- a Web-safe color palette and Web-friendly brushes
- the Image Slicer — segments a large graphic into slices that may be in different formats. The Imager Slicer generates the HTML file containing the code for the table used to display the slices.
- Java Script Rollovers — a multiple-state Image Slice tool enabling the creation of Rollover Java effects accessible once only to programmers.

Colors painted with brushes move like colors laid down in traditional oil painting. Wet canvas in Painter acts like its conventional counterpart. Traditional techniques work in this digital studio created by Painter. Computer art no longer feels cold and "slick" — as if it had been formed in a sterile environment. Painted strokes look and feel like brush strokes with colored paint showing depth and dimension.

Painter 6 offers a wide array of improvements to the interface, brush palette and controls, CMYK Tiff support, and Layers Support.

Some of the new brush features are:

- A Brush "footprint" preview before the stroke is made.
- New "computed" brush strokes for a much more realistic, continuously smooth-edged stroke.
- The ability to load a brush with multiple colors.
- Enhanced Airbrush action, allowing sprayed strokes to have dimension and direction.
- Media Pooling — based on the speed of the stroke; slow strokes create a "puddle" effect.
- Painting with Depth, 360 Degree strokes, and better pressure sensitivity.

Painter 6's interface has undergone a dramatic change in look. It now offers collapsing, customizable palettes — allowing for an uncluttered workspace. The brightness and contrast of the closed palettes has been toned down which gives the interface a more refined, unobtrusive look . It is easy to custom tailor the palette interface, and to put the tools and controls you use most often in a convenient location and the ones you are not using at the moment in an out-of-the-way, but still easily accessible position. Seasoned Painter users will be happy to know that while some palettes look very different, once they are opened, they still have the same look and feel.

The long-awaited full CMYK Support has arrived! Now Painter supports both RGB and CMYK TIF files. All Tiff files can be opened, saved, or printed.

The Magic Wand has been enhanced to select both contiguous or noncontiguous areas.

Mouse control enhancement gives the mouse the functionality of a stylus in terms of pressure, tilt, wheel, and bearing. This is accomplished through extended controls in the Mouse section of the Brush Controls palette.

Another improved feature for those users who prefer a mouse is the ability to make strokes that are based on pre-recorded and saved strokes containing stylus information. This feature allows the mouse the ability to create strokes that have a more sophisticated look than those created with a regular mouse.

There is an enhanced shortcut to recently opened files accessible through the File menu.

The incorporation of alphabetized Variant lists has eliminated the frustration of looking for a Variant's name in a pop-out menu.

There is improved rendering of complex brush strokes and large files.

Painter Libraries have new size capacities.

Brush Controls have the option of "Damping" the edge for a smoother stroke edge.

Brush Variants can be automatically saved.

Improved Cloning features allow you to see the clone and its source simultaneously, and tell at a glance which file is active.

Best of all, there are significant improvements to the selection and layer functionality in Painter 6.

- Selections can now be modified by the commands to expand or contract by specific pixel values.
- Floaters are now called Layers.
- The Canvas is a named layer in the Layer palette.
- Selections operate on the canvas as well as on active layers. It is possible to paint on a layer using nearly all brush variants.
- A selection can be created from the canvas or from a layer.
- When floating a selection, it becomes a floating object positioned above its "parent" layer. Each layer can have one floating object.
- Layers are unlimited in size and may contain imagery not visible over the canvas. A layer like this can be moved to position the desired imagery within the visible confines of the canvas. It can be moved around and positioned repeatedly without losing pixel information.

If you are a traditional artist looking to make the transition to digital media, Painter is definitely worth a try. If you are a computer artist looking to broaden your scope, Painter is sure to be an eye-opener. If you are a beginner, how lucky for you to meet Painter so early in your career!

Chapter 1

The Painter Interface

Chapter Objective:

To introduce you to an exciting natural-media software program: Metacreation's Painter. We will begin with a brief description of the working environment, the document as a "canvas," and opening, closing, and saving your work. We will proceed through a tour of the interface, highlighting the navigational tools, the layout assistants, drag-and-drop features, and setting up your Preferences. Once you become familiar with the interface we will begin to move around the environment and try out the controls. In chapter 1, you will:

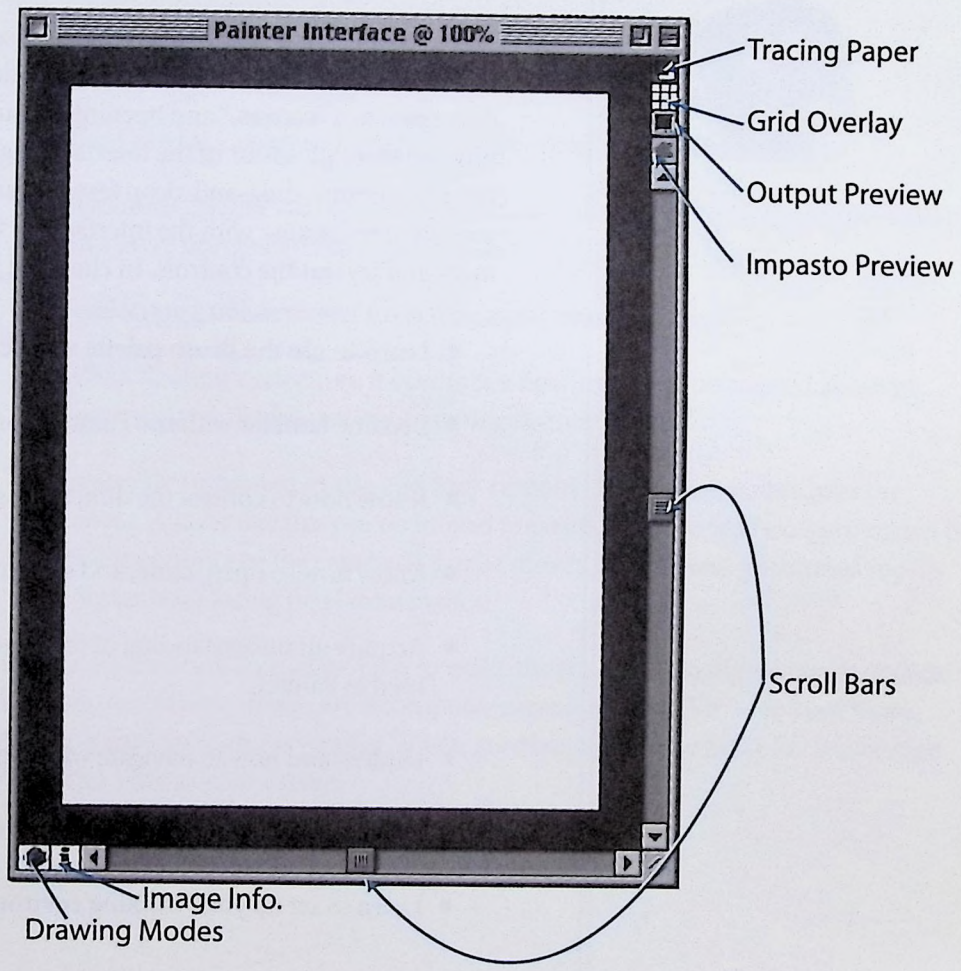
- Learn to use the Brush palette and become familiar with all the variations.
- Become familiar with the Painter workspace.
- Know how to control the dimensions of your canvas.
- Know how to open, close, and save your work.
- Acquire an understanding of the timesaving keyboard shortcuts that can be used in Painter.
- Understand how to navigate within the Painter interface.
- Know how to access the Preferences to customize the interface.
- Learn to set up your working environment to maximize your workspace.

Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

The Painter Interface

Painter is a very sophisticated software program that offers many unique effects. It is surprisingly easy to use these features once you know the various ways to access the controls: by the Toolbox, the pull-down menus, the palettes, and the keyboard shortcuts.



A brief reminder about modifier keys:

When a step calls for either the Command key (Macintosh) or the Control key (Windows), the instructions will read "Press the Command/Control key." Don't press both. Press the single key used by your operating system. The same advice goes for the Option/Alt keys. Macintosh users will press the Option key; Windows users will press the Alt key.

Grid Overlay

Every Painter canvas offers the option of using a non-printing grid overlay. Grids are invaluable when you need to line up elements, or to create correct proportion. The Grid button is a toggle. (A toggle turns the feature on the first time it is clicked. It turns off the next time.) The grid can also be accessed from the Canvas menu. The available options include the type of grid displayed, vertical and horizontal spacing, and the color and thickness of the grid lines.

Rulers and Guides

To display the rulers from the Canvas menu, choose Rulers>Show Rulers. This feature toggles On/Off. To change the units of the ruler, you can select Ruler Options in the same menu, or Option/Alt-click in the ruler at the document's edge.

Grids are invaluable for stacking 8-up business cards on card stock.

Hint: You can enable a guide by clicking on a tick in the rule. Move a guide by dragging the triangle "guide base" within the ruler.

To return to 100% document size, double-click on the magnifier or the Grabber tool.

To drag out non-printing guides, first display your rulers. From within the ruler, drag a guide out to the position of choice. Drag vertical guides from the ruler on the left side of the document; horizontal guides from the top. Enable the Snap-to-Ruler-Ticks option by selecting Canvas>Ruler Options.

Zooming

When Painter opens a document, its default magnification is set to 100%. There are several ways to change the level of magnification. The Window menu offers various choices: Zoom In, Zoom Out, and Zoom-to-fit (the screen), or you could use the Magnifier tool with the modifier keys, such as the Alt key on Windows systems and the Option key on a Macintosh. Finally, you could change the zoom level in the Control palette. (Zooming will be covered in more detail in Chapter 2 in the discussion about tools and palettes.)

Zooming Around

There are many ways to magnify your image. The first way is to choose the Zoom In and Zoom Out options from the Window menu. There is also a Fit-to-Screen choice. The next way is to get the Magnifier tool from the basic Toolbox and click. The easiest way is to use the keyboard shortcut Command/Control>+ (plus key) to increase, or Command/Control>- (minus key) to decrease.

Tracing Paper

The Tracing Paper feature works exactly the way tracing paper works in traditional media. Before you can use this feature you must set up a clone source. (More about the cloning features in Chapter 5.) Tracing Paper provides a color "ghost" of the original to trace with either the clone brushes or other brushes using the clone method. This option is a toggle, or can be accessed from the Canvas menu.

Image Info (pop-up menu)

In the bottom-left corner of the document window is a little "i." Click and hold on this "i" and a pop-up menu will appear that displays the width, height, and resolution of your picture. Additionally, it shows you how your image fits on the page. This page is denoted by a gray rectangle, with your image area represented by a white rectangle within its borders. You can access the page size and orientation through the Page Setup dialog box under the File menu.

Full-Screen Mode

There are two ways to display your canvas without scroll bars or a document frame. The first is simply to choose Command-M (Macintosh) or Control-M (Windows) to toggle On/Off. The second way is to choose Screen mode toggle from the Window menu.

Painter and Pictures

Painter handles pictures two different ways: as pixel-based (bitmapped) art and as vector art. The first type of imaging program describes a picture pixel-by-pixel. You can imagine that a file could get quite large at a high resolution and/or large dimension. This type of imaging is used for photographic-quality output where fine detail is critical.

A photograph is an image which demands pixel-by-pixel descriptions to accurately render tonality.

The second way, vector art, is used by drawing programs, and is sometimes referred to as "object-oriented" art or "shape/path" programs. Painter also calls them shapes and paths. These are different than images derived from pixel-based descriptors because the program describes the shape or perimeter of an area mathematically and then describes the fill used within that area. Programs such as Adobe Illustrator and CorelDRAW are vector-art programs. The files are quite small when saved because they use space efficient area-based descriptions. Vector-based graphics do not depend on resolution for clarity.

Painter has a full arsenal of both types of drawing tools that can be combined in one canvas.

The keyboard shortcut for Full-screen mode is Command/Control-M.

The keyboard shortcut for Zoom In is Command/Control-(+). The keyboard shortcut for Zoom Out is Command/Control-(-).

Most professionals work on images that are at 300% or 400% magnification since it is easier to achieve clean detail and smooth blends.

Opening Files

Painter supports full-color images as 24-bit color (three channels — red, blue, and green, having an 8-bit depth in each; 8-bit = 256 levels of gray). Painter 6 can also "see" a CMYK file. Some types of files that it cannot open are CIE Lab and the Kodak PhotoCD format. If you have the need to use these file types in Painter, first open them in Photoshop or DeBabelizer and then convert them to RGB.

Saving Your Work

There are various file formats to work with and they can all be accessed from the Edit menu under Save, or Save As. If you have a mask or any other "attached" file information, there are several file formats to choose from that recognize masks, channels, and paths. The list that follows will provide some detail about what each format offers.

You can open images stored on Kodak Photo CDs if you open the ones in the "Photos" folder.

If you're going to output your Painter file, save it as a different format. Most service bureaus cannot read a RIFF.

RIFF: Painter's native file format (Raster Image File Format). A RIFF file will preserve any "Wet Layers," image and transparent floaters, reference layer, dynamic layers, and all vector-based selections including mosaics. Photoshop 4 or higher is the only program that preserves these special features (except for the "Wet" feature — no other application can make or recognize one.)

TIFF: (Tagged Image File Format) This is the most universal format in the industry. TIFFs can save alpha channels. Masks can be preserved by checking the Save Alpha checkbox. New to Painter 6 is the ability to save as either RGB or CMYK TIFFs. The bad news is that Painter doesn't have an LZW (the initials of the inventors of this compression scheme: Lempel, Ziv, and Welch) compression option for TIFFs.

Photoshop 2.0 and 3.0: When you save your document as a Photoshop 3.0 file, most of Painter's features are preserved intact. Layers remain intact, masks become channels, paths, and subpaths translate seamlessly. It is the perfect choice if you often move data from one format to the other, or if you need to share images with those who do not have Painter 6. The Photoshop 2.0 format will preserve only one mask as an alpha channel, and does not support layers.

PICT: Many authoring and multimedia programs use this format. Painter's PICT format allows you to save a single mask (an alpha channel). You can save a Painter movie as a series of PICT files which can be exported and worked on in another program. (More on this feature in Chapter 11.)

GIF: The World Wide Web is the largest supporter of GIF (Graphical Interface Format). This format allows you to choose how many of the possible 256 colors you wish to display your image. The fewer the colors, the smaller the file size — the faster it will load on the Web. (More on this subject in Chapter 12.)

When saving as a TIFF, you are given the option of either RGB or CMYK.

RGB has a much broader range of colors than CMYK. Do not convert your only copy of an RGB image to CMYK. Instead, choose File> Clone. Save the clone as CMYK, leaving the original RGB color file intact.

JPEG: Stands for Joint Photographic Expert Group. This type of file format was developed to allow imagers the flexibility of choosing the level of compression. The greater the compression, the greater the loss of information. This type of *lossy* compression is fine for pictures that are never intended for more than on-screen viewing, or for archived images with no hard edges. (More on this subject in Chapter 12.)

EPS: (Encapsulated PostScript) Painter allows you to save as a 5-part EPS DCS file, but does not allow you to actually open them. An EPS DCS file is the four "plate" CMYK version of your file plus the fifth preview version. This format drops all layers, paths, and masks, and is meant to be the final step before prepress. Before saving to this format, be certain that you have a version saved that supports layers and masks. (Refer to your User Guide for more on EPS Options.)

BMP, **PCX**, **Targa**: These formats are used on DOS and on Windows-based workstations. BMP (bitmapped) is a graphic format for Windows, while PCX is the format native to PC Paintbrush. Targa (TGA) is often used by Windows-based animation programs for importing numbered files.

Each time you open and close a JPEG file, its image quality diminishes. The on-screen version may look the same because it is displayed at a standard 72 ppi no matter what the actual file size. Image quality becomes apparent when the file is printed.

Painter also can specifically use "Video Legal Colors." Access this feature by selecting Effects>Tonal Control.

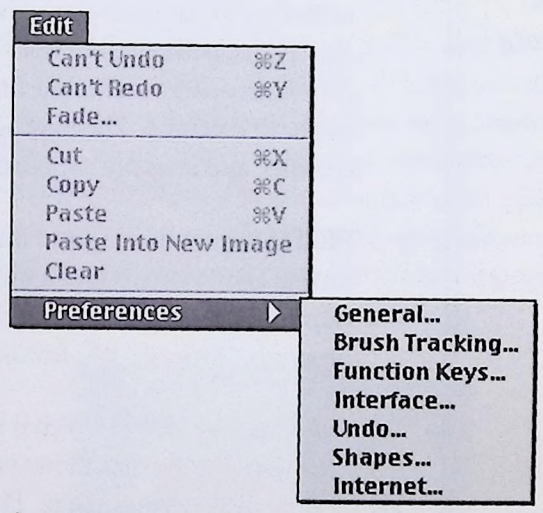
You can set up a personalized set of Function keys for those menu items you use all the time. For example, F1 through F4 can be personalized as Save As, Revert, Clone, and Rulers.

Movies: Painter offers the flexibility of saving movies in various formats. You can save a single frame as an image, the movie as a GIF animation (good for Web pages), as a stack (FRM) of files, or as a QuickTime or AVI/VFW (Windows-based only) movie.

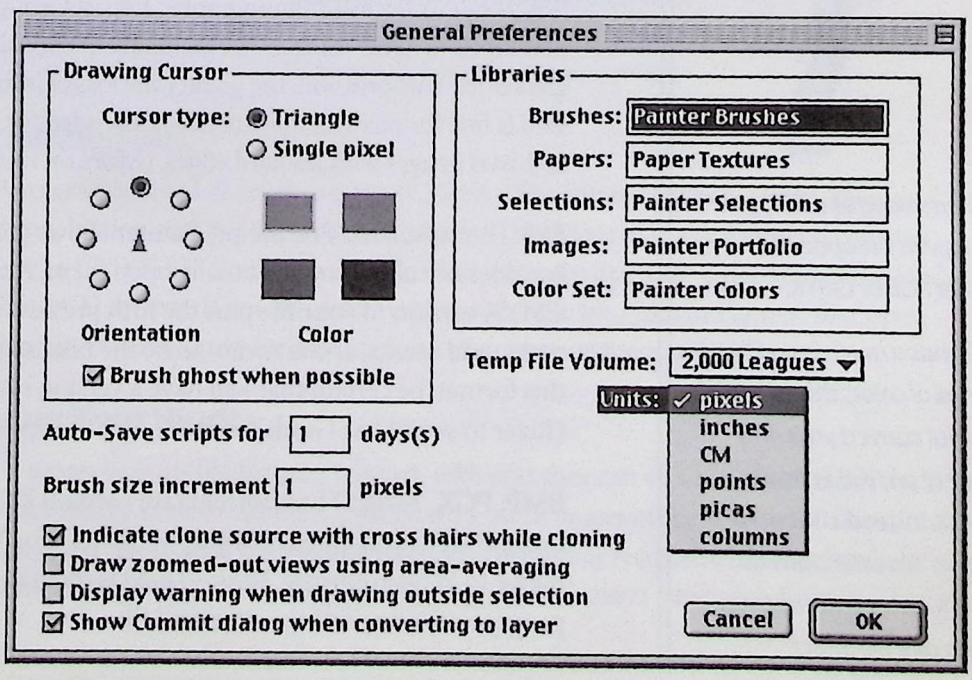
Pyramid files (PYR): There files are most often used for compositing high-res files. Images placed in this format are imported as reference layers (low-res "proxies") of the original image. Scripts are often used to playback a pyramid file at a higher resolution.

Your Preferences

Take a few moments before you start using Painter to customize your Preferences to your work style. There are a few preferences in the General category that may save you a lot of time and trouble.



You should first set the cursor type to be most natural for you; either the colored triangle (choose your color) or the crosshair denoting the exact center of your tool.



In the Preferences you can choose a non-default Brush library as a boot set.

Professionals limit their number of Undos by relying on other methods to save various versions. Making a clone is an effective alternative — and it doesn't waste RAM in the way that the Copy/Paste feature does.

Assign specific libraries to load when the program is first launched. Determine which volume you want Painter to use for its Temp file. The Temp file is a portion of your hard drive which Painter uses to "think." Give Painter a large section of your hard disk from which to work. This is also the place to choose the units the program will use to display measurements.

There are 32 levels of Undos available in Painter, but that's not a good reason to set the level of Undos at a high number. Five is the default number, and Painter can hold 5 versions in memory or on the scratch disk (Temp file) to revert to. The more levels of Undo you set, the more RAM and scratch disk space (Temp file) your computer reserves on the off-chance you might want to revert to that version.

Notes:

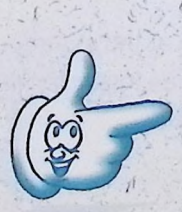
Chapter 2

Working with Painter

Chapter Objective:

To learn about the basic tools, palettes, and menus that can be used to create bitmapped and vector art. We will begin with the "master" Toolbox, providing brief descriptions of each tool. From there we will proceed through the many palettes and menus to familiarize you with the Painter methodology. In Chapter 2, you will:

- Learn how the Painter tools operate and how to access their features.
- Gain an understanding of how the palettes are configured and how to personalize their features.
- Load additional libraries of art supplies.
- Learn how to maximize your workspace by efficiently arranging your palettes and windows.
- Use key commands and shortcuts to access the tools from the keyboard.
- Gain experience with fundamental techniques that will support more sophisticated projects later in this course.



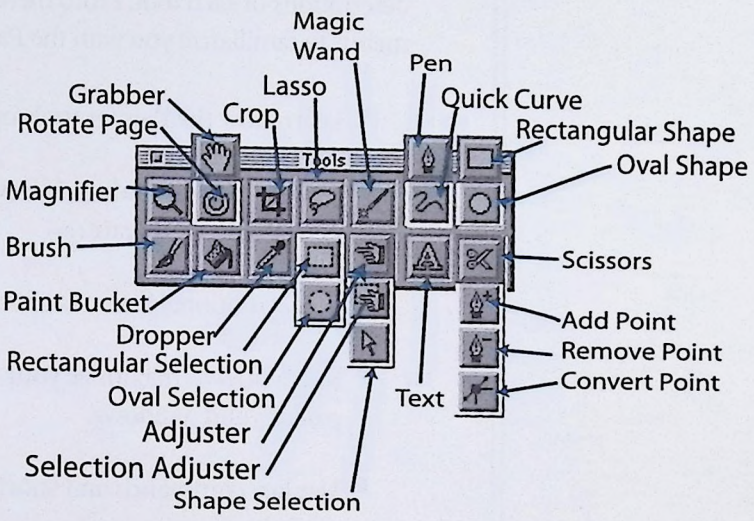
Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

Working with Painter

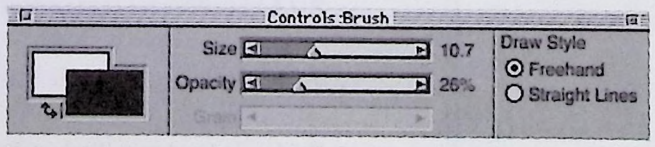
Just like a traditional art studio, Painter stores tools for different kinds of art in drawers, palettes, and libraries. The most commonly-used tools are displayed in a simple Tool palette. This palette is divided into sections of similar tools — the tools that paint, the tools that deal with vector art, and the navigating tools. Several of the tools have "pop-out menus;" the Oval selection tool pops out of the Rectangle selection tool. Tools with pop-outs display a little black triangle on the bottom-right corner of the button. To access the hidden tool, hold the mouse on this icon and the tool pops out to be selected.

The keyboard shortcut for the Control palette is Command/Control-5.



It is a good idea to have the Control palette visible while you're working, perhaps in the lower-left side of the screen for quick access to the tool options.

The Control palette displays the available options for each of the main tools. This palette changes to reflect the tool that is currently active. The toggle for this palette can be accessed by selecting Window>Show/Hide Controls.



The Control palette reflecting the brush controls. This palette changes to reflect the active tool.

Navigating and Utility Tools

For fast zooms, press the Command/Control key and "+" (plus key) to magnify. Press the Command/ Control "-" (minus key) to reduce.

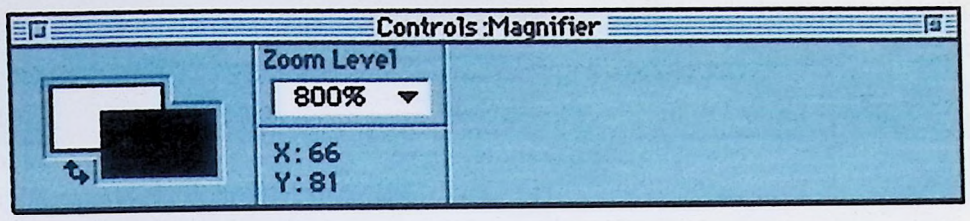
Want to zoom but are in another tool? Simply press Command/Control-Spacebar and click to zoom in. Press Command-Option-Spacebar/Control-Alt-Spacebar to zoom out.

Double-click the Grabber tool to Zoom to Fit Screen.

Double-click the Rotate Page tool to return the page orientation to normal.

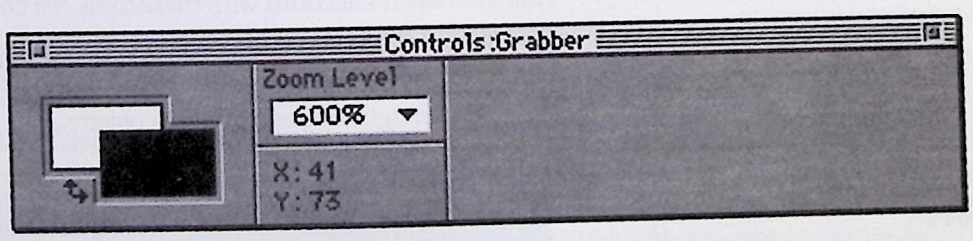
Double-click the Magnifier tool to return to 100% view.

Magnifier: This tool allows you to enlarge an area of your picture to refine the details, or to get an overall view of the work in progress. To zoom out with the Magnifier tool selected, hold the Option/Alt key and click. Double-click the Magnifier tool to return to 100%.



When the Magnifier tool is selected, the Control palette allows you fast access to magnification levels.

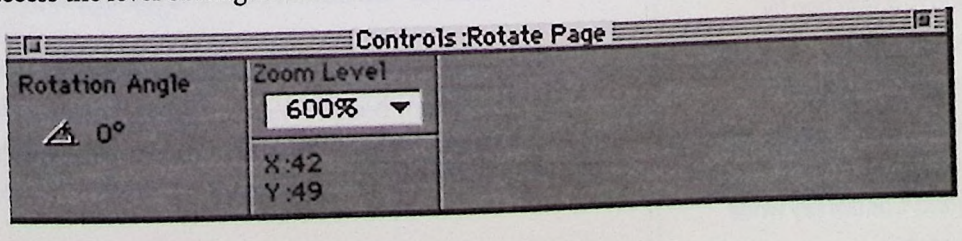
Grabber and Rotate Page tools: These tools share the same location on the Tool palette — they are pop-out menus. The Grabber tool allows you to scroll around your picture by simply dragging it in the direction you wish to go.



The Grabber's Control palette allows you to set the level of magnification.

The Rotate Page tool will allow you to rotate the position of the page, making it more comfortable to place brush strokes on the canvas. Holding down the Shift key while rotating constrains the rotation to 90-degree angles.

The Rotate Page tool's Control palette reflects the degree of rotation and allows you to access the level of magnification.

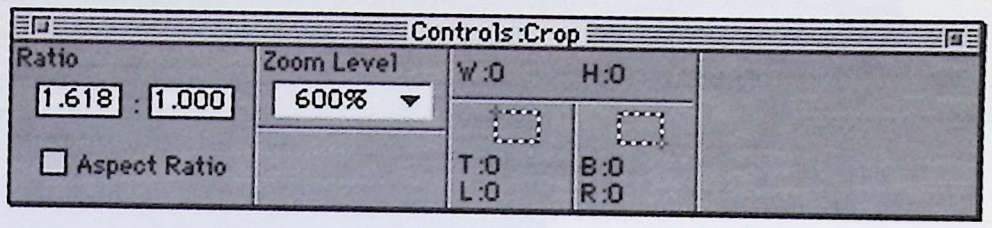


The Rotate Page tool is a drawing aid. It does not affect the permanent orientation of the canvas. To change that, access Effects>Orientation>Rotate.

These four tools should be used when you want to make image-based selections. When you need vector art, use the tools at the far-right side of the Tool palette.

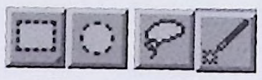
Add to a selection by holding down the Shift key and dragging with any Selection tool. Subtract by holding down the Command/Control key while dragging.

Crop: The Crop tool lets you trim the edge area of your image. Just drag out a rectangle around the area you wish to keep. You don't have to be perfect — it is an editable selection. When you have perfected the selection, click inside it. The trimmed-off area disappears. If you decide not to crop, simply click outside the selection area.

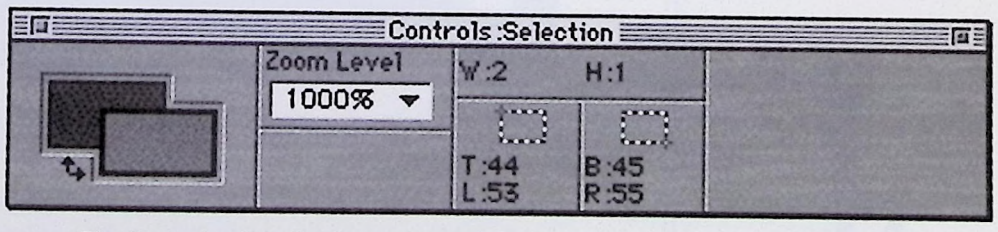


The Crop's Control palette allows you to set the aspect ratio of the cropped area and control the magnification level.

The Selection Tools



The Rectangular and Oval Selection tools, the Lasso, the Magic Wand: These four tools are used to select image areas. They are pixel-based selection tools, not vector-based. A pop-out button serves both the oval and rectangular tools. You can make regular-shaped selections with these tools. To constrain the proportions to perfect squares and circles, hold the Shift key while dragging. The Control palette for these tools displays the coordinates and dimensions of your selection. You can also change the level of magnification from this palette.



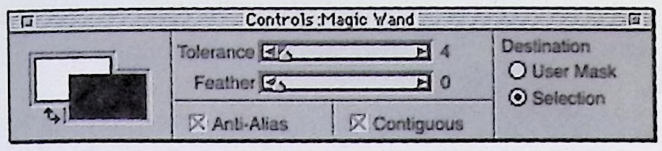
The Control palette for the Lasso, and the Rectangular and Oval selection tools.

The Lasso tool can be used to make freehand selections. The Lasso tool's Control palette is identical to the one shown above, however it provides only "X" and "Y" coordinates, rather than both coordinates *and* dimensions.

You can select an area based on color information by clicking or dragging with the Magic Wand tool. The Tolerance and Feather sliders located in the Control palette adjust the extent of the fill. You can choose whether your selected area creates a selection or a user mask. Anti-Aliasing is also an option. (Anti-Aliasing smoothes out the

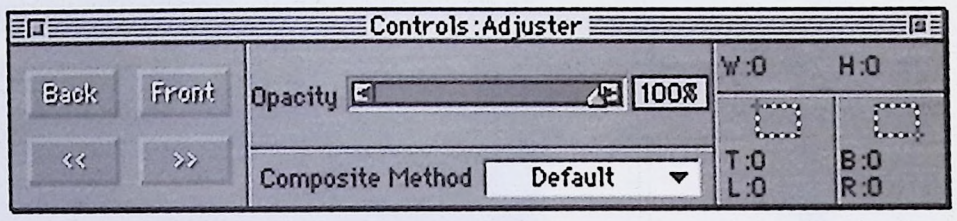
In previous versions, this tool was referred to as the Floater Adjuster tool to emphasize that it adjusts objects which "live on" floating layers above the canvas rather than the alternate "pop-out" selection adjuster, which only adjusts selection outlines.

"jaggies" by insetting a middle-value transition between sharply contrasting pixels.) It is possible to select areas that touch each other (contiguous) or areas of similar pixel-values that are not adjacent.



Adjuster Tools

The Adjuster tool. This tool may be used to select, move, adjust layers, floating objects, and shapes.



The Control palette for this tool allows you to adjust the opacity of any selected layer, the composite method, and the order that layers and floating objects appear in your image.

The Selection Adjuster tool: With this pop-out menu from the same location as the Adjuster tool above, you can select, move, and adjust selections created by the Rectangular and Oval selection tool, the Lasso tool, or selections converted to art mode from (vector) shapes. The Control palette associated with this tool provides coordinate information and displays the zoom level.

Shape Selector tool: The third pop-up menu from this location is used for editing shape paths and Bézier curves. You can move and adjust anchor points, reshape paths, and manipulate control handles on paths. The Control palette associated with this tool offers the option of changing magnification.

To change a selection into a floating object, click on it with the Adjuster tool. To float a copy of a selection, hold the Option/Alt key while clicking it with the Adjuster tool.

Shape Tools

This whole arsenal of vector-based tools is located toward the right side of the main Toolbox. We will begin with the regular shape selection tools: the Rectangular Shape tool and the Oval Shape tool.

Shapes in Painter are similar to shapes created in Adobe Illustrator, CorelDRAW, or other vector-based programs.

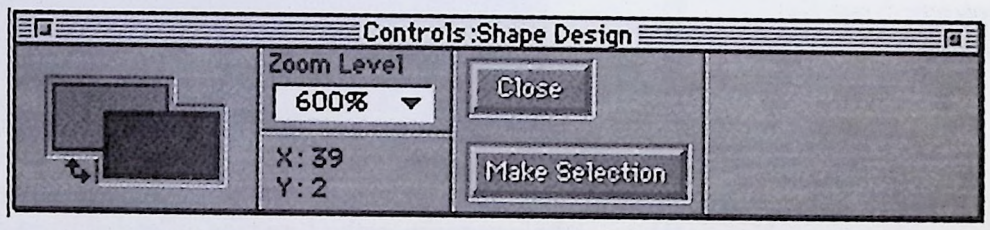
While using the Pen tool, you can access the Shape Selector tool by holding down the Command/ Control key.

Line up your type by dragging guides out from the rulers.

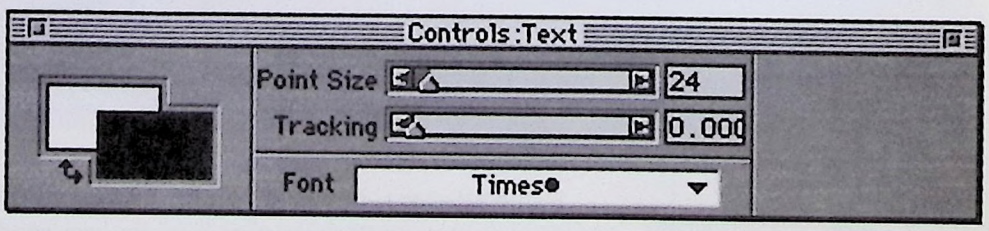
The Shape pop-up tools allow you to create vector-based objects in either a rectangular or oval shape. The Control palette provides the option of changing the magnification associated with these tools.

Pen and Quick Curves: As the most popular tools for creating shapes, these two tools may be used to create editable Bézier shapes.

The Pen and Quick Curve tools: These tools work by clicking to create straight segments, and dragging to create curved segments. The Quick Curve tool lets you draw freehand shapes, and has the same Control palette options as the Pen tool. You can close a path and make a selection by clicking buttons on the palette. You can also adjust the level of magnification.



The Text tool: Painter treats individual text characters as separate shapes; each rests on its own floating layer and has the same properties as other types of shape objects. The Control palette associated with the Text tool offers point size, tracking, and type style options.



Shape Edit Tools

These tools all reside in one pop-out location and are used to alter existing shapes.

Scissors tool: Use the Scissors tool to bisect an open or closed path, or to create open paths from closed shapes. Click on a line to open the path.

To subtract the last point created, simply press the Delete/Backspace key.

Hold Option/Alt-Shift to constrain strokes made in the Straight Line style to 0, 45, and 90 degrees.

You can switch temporarily to the Dropper tool while painting by pressing the Command/Control key.

For cartoon fills, double-click on the Bucket tool to set the "lockout" color (the color used to outline the cartoon).

Add Point tool: The Add Point tool to add anchor points on existing paths. Click on a path to add the point.

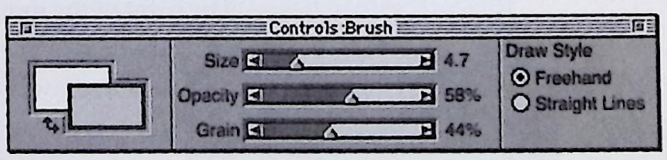
Remove Point tool: Click with this tool to remove anchor points on a path.

Convert Point tool: Used to convert smooth and angular anchor points. To convert an existing anchor point, click on it, make it active, and drag.

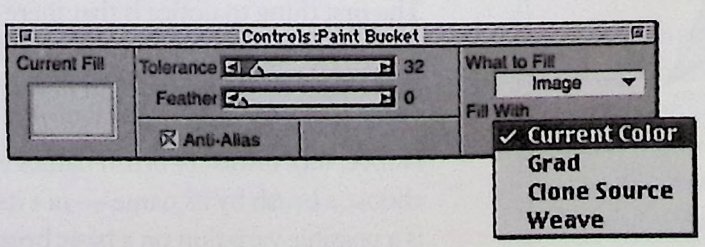
Color-Based Tools

The next three are the "master" tools for making marks on the canvas, filling areas with gradations, patterns, or weaves, or by sampling existing color from an open document.

The Brush tool: The Brush tool is the "master" tool for all stroke-making tools. They include various oil-based brushes and water color brushes, felt-tip markers, crayons, pencils, and chalk. Due to the diversity and flexibility of this tool, an individual palette with extensive choices is available. (For more on this tool, see Chapter 3.) You can draw in either freehand or straight-line style. The size of the brush, the opacity of the color, and the grain can be adjusted in the Control palette.



The Bucket tool: Areas can be filled with color, gradations, patterns, weaves, or clone source by clicking in the designated area with the Bucket tool. The Control palette allows you to choose the fill type in a pop-out menu and to choose what to fill — an image area or cartoon cel. Tolerance, feather, and anti-aliasing parameters can also be set.



The Paint Bucket Control palette showing the Fill choices.

Palettes can be shown or hidden by toggling with the Command/Control-H keys.

Palettes can be toggled by pressing the Command/ Control key plus:

1 for Tools

2 for Brushes

3 for Art Materials

4 for Objects

5 for Controls

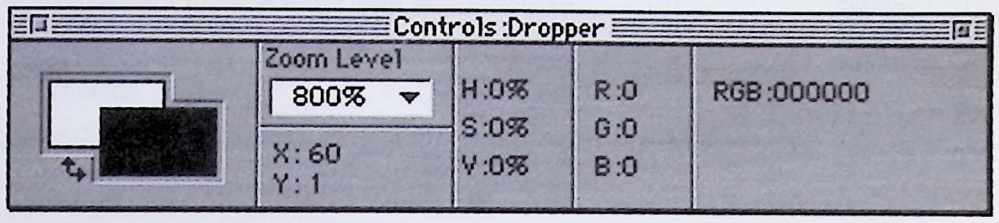
6 for Color Sets

7 for Brush Controls

You can access the Brush palette by double-clicking on the brush in the main Toolbox.

The Dropper tool: The Dropper tool allows you to sample a color from within the active document to use immediately or to store in a Color palette for later use. When you pick up a color it becomes the current color in the Color palette.

The Control palette shows you the numeric value of the chosen color as well as the magnification level.



Palettes, Drawers, and Libraries

Painter stores, organizes, and displays all the art materials you can imagine by arranging items in different palettes containing similar items. The main palettes are available through the Window menu, by selecting the Show (palette's name) option.

The Brushes palette contains tools that make marks on your canvas. The Color Set palette has different sets of color swatches. The Art Materials and Objects palettes are organized into a palette/subpalette configuration. You are already very familiar with the Control palette. Painter also offers the option of creating your own Custom palette.

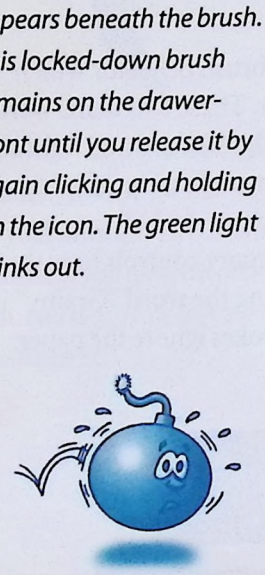
Let's look at the features the palettes have in common. We will use the Brushes palette for this example. Display it on screen so you can try it. The open Brushes palette is shown below. The front of the drawer is the first row of 5 brush icons. Beneath that is a little purple triangle which opens and closes the drawer beneath. This drawer currently holds the default drawing and painting tools. (When the drawer is open, the purple triangle turns bright green.)

Upon first inspection, this palette and the choices displayed are a bit overwhelming. It is important to remember that although there are a lot of choices, MetaCreations has made it very easy to custom-tailor a set of palettes exactly right for the project being worked on. The array of brushes are here to offer flexibility, not confusion, and don't need to be on the screen at all times.

The first thing to notice is that there are brushes on the drawer front, and brushes stored inside the drawer. When the drawer is closed only five brushes appear. You can move your favorites here and never have the need for the open palette on the screen.

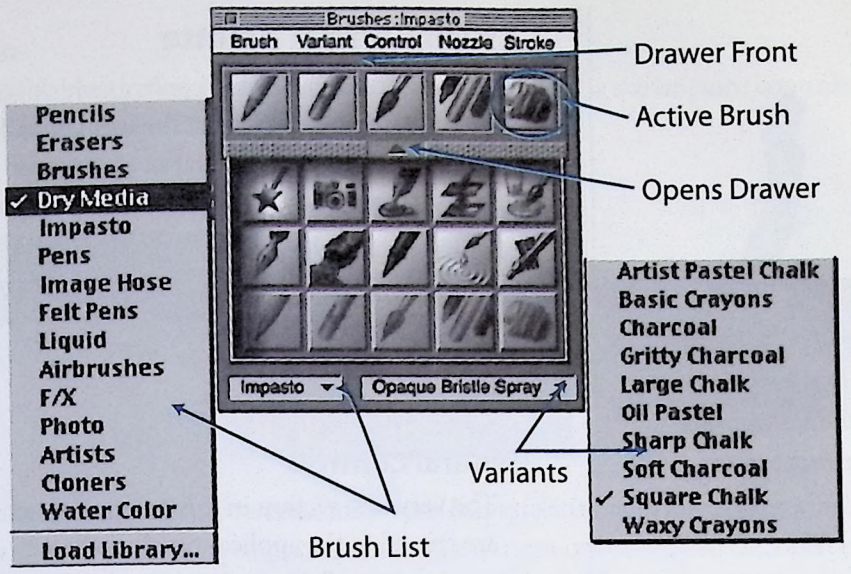
Notice, too, the list of brush names which pops-out on the left side. It is easy to choose a brush by its name — not its icon. On the right is a list of Variants. A Variant is a possible variation on a basic brush. A pencil, for example, can have as a variation (or as a Variant) the possibility of being a 2B pencil, or a very large (500 lb.) pencil or a soft lead pencil.

You can lock frequently used brushes to the drawer-front by clicking and holding down on the Brush icon until a tiny green light appears beneath the brush. This locked-down brush remains on the drawer-front until you release it by again clicking and holding on the icon. The green light winks out.



Only lock down 4 brushes — Painter needs the vacant fifth slot to park a brush selected from inside the drawer.

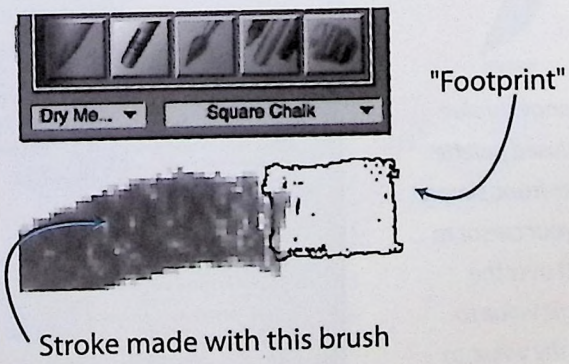
If the library you load has more than 25 items in it, scroll bars appear to help you access the "bottom" of the drawer.



Across the top of the palette are a series of menus allowing you to further customize and fine tune options for your brush. The Brushes palette, Art Materials palette, and Objects palette all have menus that offer additional options. These menus reflect controls specific to that tool or material.

You can load other libraries of art supplies by going to the Load Library command. It is the last option available in the written list of choices.

One of the best new features in Painter 6 is that it provides a preview of the brush "footprint" before you lay down the stroke.

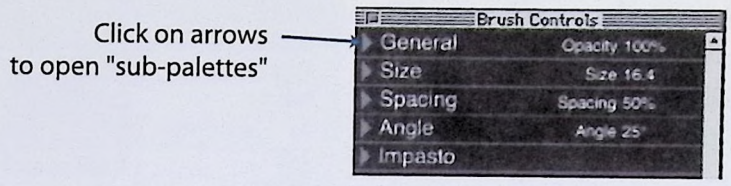


We have already seen the Brush palette and the different Control palettes associated with tools. We will continue discussing Brushes and the new special Brush Controls palette, which further refines a brush's look and feel. Then, we will continue with the rest of the palettes in the order they appear in the Window menu.

Double-click the Brush tool in the main Toolbox to make the Brush palette appear on the screen.

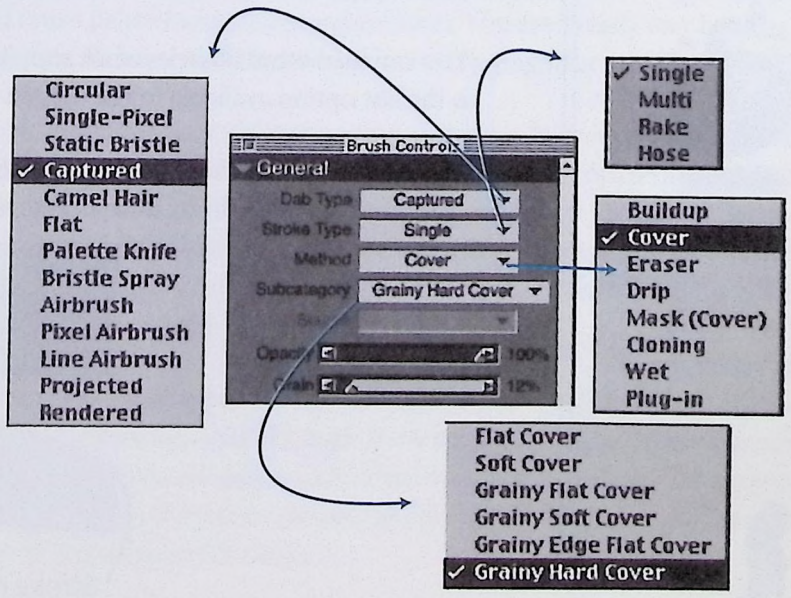
Brush Control palette

This palette contains the controls which govern how a brush is built — its size, spacing, the consistency of the bristles, and how it allows media to flow. In short, all the things which individualize a particular kind of brushstroke. The palette appearance is new as of Painter 6, and represents a radical change in the look of the interface.



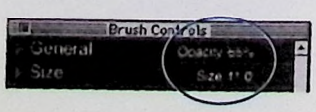
General Controls

The very first section in this palette contains some aspects of brush behavior which are critical to the application of media to a canvas or to a layer. These two items were previously available in the expanded Brush palette. They are the Method and Subcategory controls. These control how the media relates to the canvas. For example, does it "cover" the canvas? Or does it "build up" — getting darker every stroke? Are you using the brush to "mask" or as a "drippy" brush? The subcategory controls how the paper texture is used in tandem with the stroke. All types having the word "Grainy" in their name show the active paper texture. "Soft" and "Flat" strokes ignore the paper texture.



In addition to these two choices, the General Controls palette allows you to specify what kind of brush dab and stroke to use.

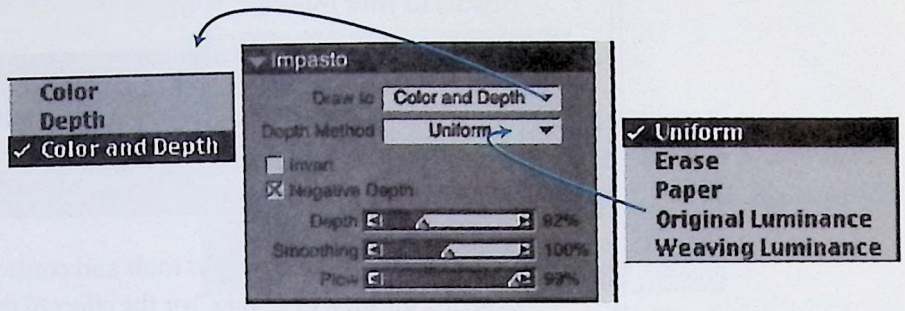
To change a value on a closed palette drawer-front, simply drag your cursor to the left over the numeric value to lower the value, to the right to raise the value, or click on the arrow to access the size slider.



Use Tool Tips (turned on by default) to view the names of your brushes in a custom palette. If you turned it off, you can reactivate it in the Help menu.

Impasto

One of the most refined Brush Controls new to Painter 6 is the Impasto controls located in the Brush Controls palette.

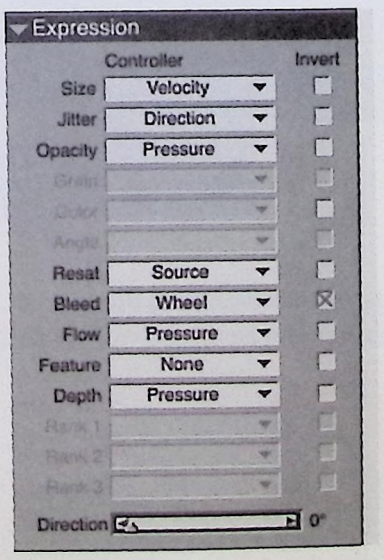


This control palette lets you customize your Impasto strokes by specifying whether the stroke will paint with Impasto paint in the current color, with the 3-D effect (Depth) that the stroke makes, or with a combination of both color and depth of the stroke.

As with many of Painter's surface controls, you can control precisely how the stroke relates to the canvas by selecting the Depth Method from the fly-out menu. The look of the stroke is further enhanced by using the three sliders. You can even chose to Invert or have "negative depth" by activating the check-boxes.

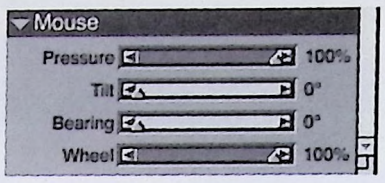
Expression

Another useful brush control palette is "Expression." Here you can control the size, opacity, flow, depth, and other stroke characteristics based on parameters like the speed (velocity), direction you draw, stylus pressure, and other settings.



Mouse Controls

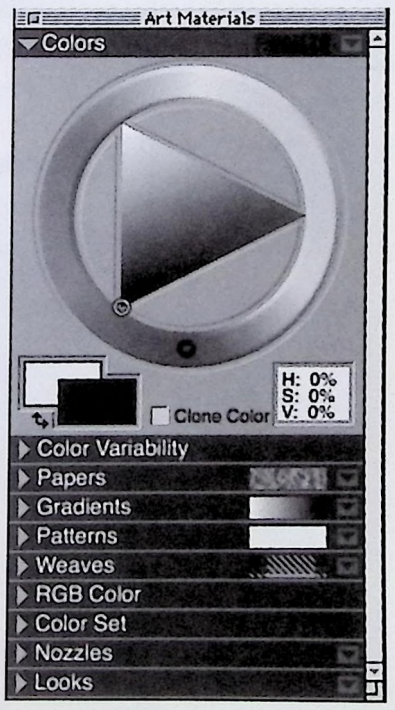
These new controls allow you to set the pressure sensitivity, tilt, bearing (or way the mouse is pointed) and the wheel (which refers to the wheel of an Intuos Airbrush Stylus) to your mouse.

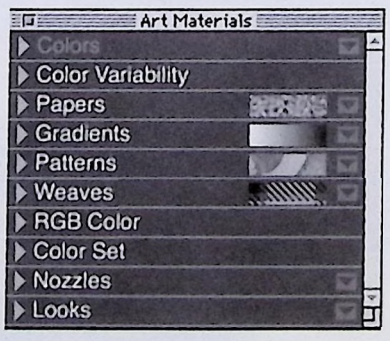


Experiment with the various tools and controls in the drawers. It is difficult to describe the look of a "rake" or the effect of the "well" sliders. Try the many effects as they vary depending on the brush that is chosen.

Art Material Palette

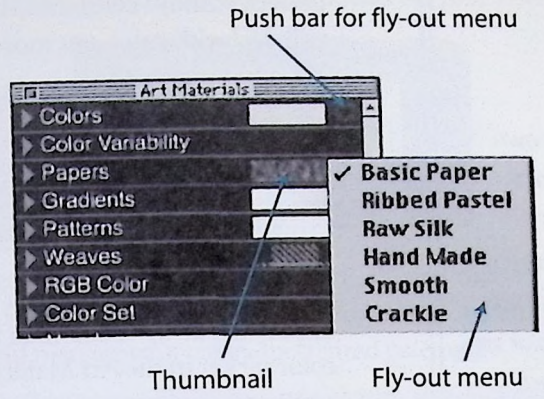
This palette contains colors, color variability, paper textures, graduates, patterns, nozzles, color sets, brush looks, and weaves. In this example, we are looking at the palette in its closed section panel (also called "drawer") and opened drawer state.





A new feature in Painter 6 is located in the Spacing Drawer on the Brush Control palette. It is a check-box called "Continuous Time Deposition." When enabled, it allows media to "puddle" like it would if you hesitated in the midst of a stroke. Try it!

Painter provides easy access to the items within a drawer — they can be accessed from thumbnails and fly-out menus located on the drawer-front.

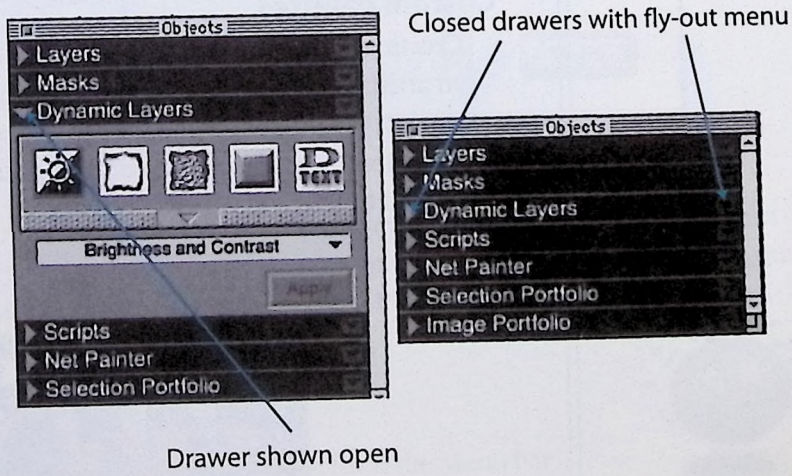


The Brushes, Art Materials and Objects palettes each have a subpalette with various supplies and options available.

The Gradients palette will perform a little animated spiral effect. Select a gradient, set it to the Spiral type, and click in the middle of the gradient Preview window for a wild optical effect.

Objects palette

This palette is the control center for selecting and organizing the different layers, for making and saving masks, for applying dynamic plug-in effects to your image, for storing selections and images, and finally, for using Net Painter, which allows you to collaborate with others across the Internet on projects using Painter.

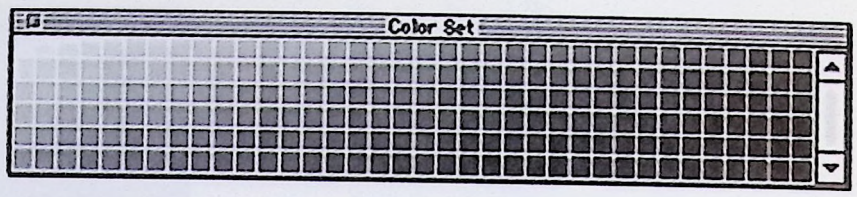


This palette has similar architecture to the Brush Controls palette with fly-out menus, collapsible drawers, and the ability to drag items into positions higher or lower than their default placement.

Color Sets have their own palette. They are also a subpalette on the Art Material palette where you can load existing color sets or create your own color set to suit a specific project.

Color Set palette

The Color Set palette holds sets of colors grouped by saturation, value, brights, pastels, "candy" colors, and more. The default Painter color set is shown below. We will deal with color sets more later in this course book.



This palette is, of course, not black and white. Choose Window>Show Color Set to display the array of colors in the default color set. Using a color set rather than the color picker in the Art Material palette saves time and the tedium of having to reselect a color every time you wish to use it. You can make and store your own color sets. Painter offers a variety of ways to tailor the interface to suit your particular work style.

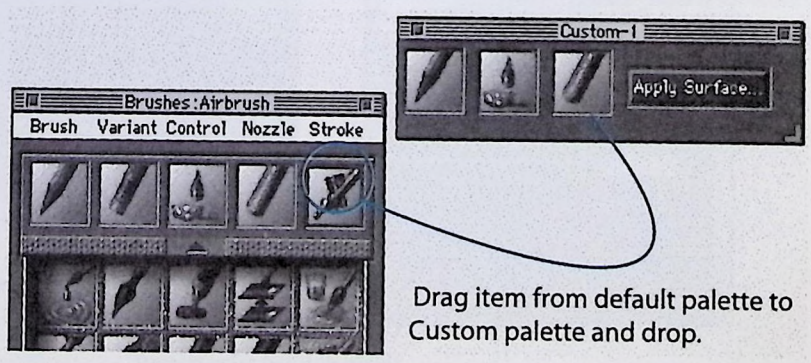
Customizing the Interface

Painter offers a number of brush, texture, and application options that will quickly overrun your screen space, forcing you to spend time rearranging palettes. Accessing supplies and tools from drawer-fronts is only one way to streamline your workflow. There are a number of features to make working in Painter more enjoyable.

Custom palettes

Creating groups of your most commonly-used palettes will increase your efficiency as an artist. Start a Custom palette by dragging your first item off a default palette. When you let up, a small Custom palette is created for that item. Add brushes, textures, and gradations to that palette by dragging and dropping them to the new palette. It will expand to the right to hold your items.

Creating and using Custom palettes can cause your Windows-based system to freeze or crash. No known problems on the Macintosh system.



Drag item from default palette to Custom palette and drop.

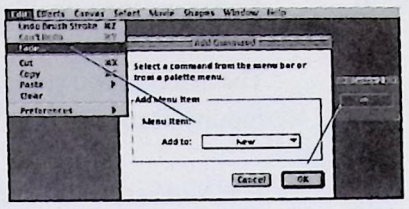
Be certain to use meaningful names for your palettes — not cute names. You'll never remember what items the "Awesome" palette contains, but you will know immediately what items you'd expect to find in a "Watercolors" palette.

Rearrange items within a custom palette by pressing Control/ Shift and dragging the icon to a new location. (Control-key for both Mac and PC).

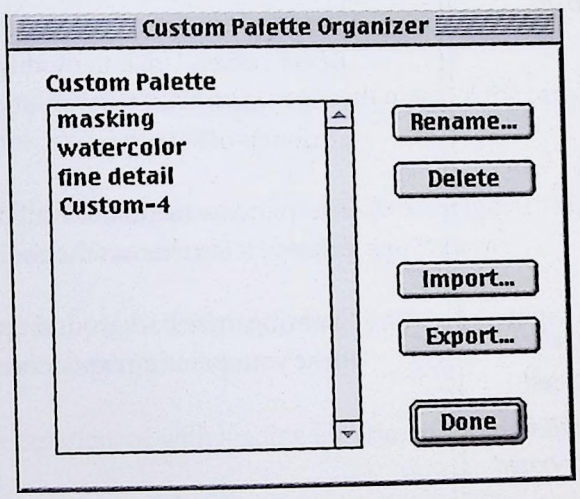
Delete an item by pressing Control/Shift/Option/Alt and clicking.

Remember that the Select menu is for image (pixel) based selections and the Shapes menu controls vector-based areas.

To add menu commands to this palette, choose Window>Custom palettes>Add Command. Here you will be provided with the option of choosing a command from the menus that will create a button for that command on your new palette.



Create Custom palettes for different types of work. Painter offers a Custom palette Organizer that is available from the Window menu under Custom palettes. Here you can name, delete, and manage your many specialized palettes.



Once you've found the best way to organize the position of all your palettes on screen, you can save this layout by choosing Window>Arrange Palettes>Save Layout. You can load this specific arrangement by going to the same Window>Arrange Palettes>(name of layout).

The Menu Bar

There are various features available from the Menu bar.

File Edit Effects Canvas Select Movie Shapes Window Help

Under the File menu you will find commands that affect the document as a whole, such as save, clone, import, and print.

The Edit menu is where you will go to do simple actions such as cut, copy, and paste. It is also where Preferences resides.

The Effects menu contains all the powerful tools for image editing and surface and tonal control.

One of the options under the Help menu is On-line help. If you have a modem, you can access discussion groups and technical assistance through the MetaCreations web site.

Remember that the Select menu is for image-based selections and the Shapes menu controls vector-based areas.

The Canvas menu contains the commands that affect the canvas being worked on. Here you can resize, add canvas, make a mosaic, turn your canvas into wet watercolor paper, and set rulers, grids, and guides. You can even preview your output using Kodak printing profiles.

The Select menu contains commands for image-based selections. Here you can modify, feather, stroke, convert, save, and load selections.

The Movie menu lists every command you will need for controlling the frames in a production. Here you can add, delete, rearrange frames, and insert an entire movie into an existing frame stack. You can also apply scripts and brush strokes to entire movies.

The Shape menu contains all the commands governing shapes made from paths or Bézier curves. Use it to modify existing shapes, make compound shapes, join end-points, or convert to layers and to selections. This menu is where you go to set up attributes of shapes.

The Window menu holds all the controls for arranging, saving, and customizing palettes. It also houses the zoom commands and the Screen Mode Toggle.

Knowing these background tips and interface options before diving into Painter will make your painting experience a much more enjoyable adventure.

Chapter 3

Painting

Chapter Objective:

To familiarize you with the brushes, fill tools, and image-based selection tools. To select and use these tools. To build and adjust new brushes, and apply them to original artwork. In Chapter 3, you will:

- Learn to use the Brush palette and become familiar with all the variations that can be applied to a basic brush.
- Understand how to select and paint with many of the brushes, including the Image Hose and Artist's brushes.
- Become familiar with the art supplies offered in the Art Material palette, such as Color, Gradations (Gradients), and Patterns.
- Begin to use the basic tools, including brushes, selections, and fill tools and to customize existing brushes.
- Become experienced with loading libraries of additional art supplies.
- Create new documents in Painter, open existing files, and save your work.
- Gain experience with fundamental techniques that will support more sophisticated projects later in this course.

Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

Painting

Press the Tab key to move quickly from one text field to the next.

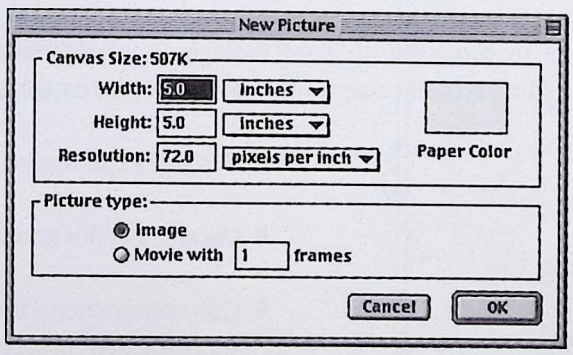
As its name implies, Painter is a program that focuses on painting. With its many brushes and the ability to customize them for a perfect, individualized look, it presents a seemingly endless array of options. The most efficient way to learn to work with Painter is to jump right in. We'll set up a canvas and try out the brushes — with explanations every step of the way.

The Canvas

Although you can paint on previously scanned or digitized images, you will most likely start with a blank canvas in Painter. It appears smooth, and its color is that of the one you have chosen in the paper color dialog box. It is only after you have started to lay down strokes and texture that Painter's effects become apparent. Let's try some!

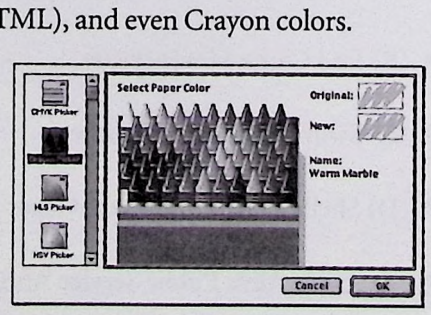
Create a New Canvas

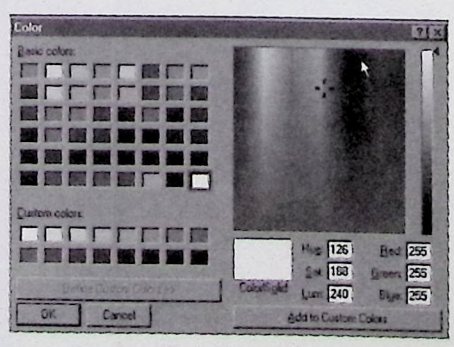
1. Create a new document by choosing File>New. It should be 5″ × 5″ at 72 ppi. The Picture type radio button next to Image should be selected.



A narrow gray edge should always show around the image area to ensure that your paint strokes abut the edge of the picture.

Notice that you can set your paper color in this dialog box. When you double-click on the Paper Color box, Painter sends you to a dialog box that allows you to describe your paper color in a variety of ways. Macintosh operating systems, which are geared more to the desktop publishing industry, have a more comprehensive choice of color spaces. Colors are selected by the CMYK percentage values, in RGB (red, green, blue), in HSV (Hue, Saturation, Value), HLS (Hue, Luminance, Saturation), Web Safe (HTML), and even Crayon colors.





Painter's Paper Color dialog boxes on Macintosh and Window operating systems.

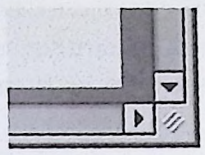
The keyboard shortcut to display the Toolbox is Command/Control-1.

The keyboard shortcut for the Brush palette is Command/Control-2.

The keyboard shortcut for the Control Palette is Command/Control-5.

To save a picture, choose Save from the File menu, navigate to the place within your computer where you wish to store the file, and press the Save button. You should save often — every few minutes is not too frequent.

2. On a Macintosh, select the Crayon Picker and then select Warm Marble. If your system does not support this extended color choice, or if you are a Windows user choose a warm, light beige tone.
3. Click OK to close the dialog box and click OK in the New Picture dialog box. Your new document will now appear on the screen.
4. Choose Window>Zoom In and drag the window out from the little tab in the lower-right corner of the document window. Make this canvas as large as possible. There should be a little edge of gray to separate the "live" canvas from the scrollbars.



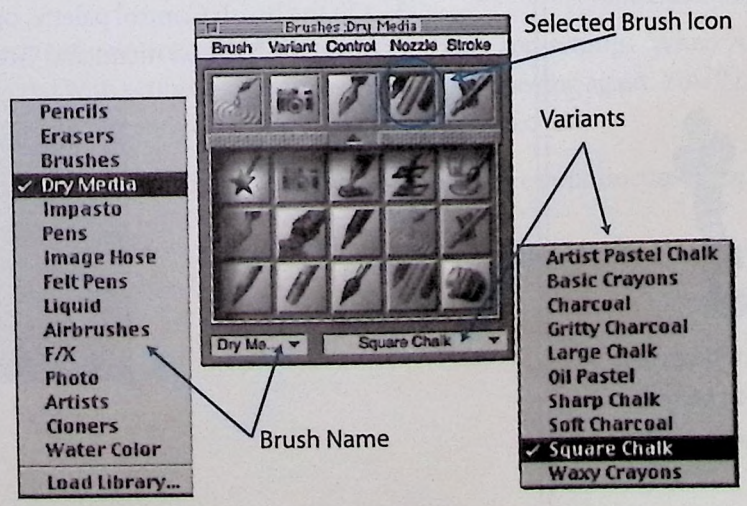
5. Save the document as "Exploring Painter.RIF" to your **Work in Progress** folder. We can now begin exploring with the painting tools. Keep the document open.

Using Brushes

Painter offers a wide variety of Brush tools that can be saved and loaded as sets called libraries. There is, of course, the default Painter Brush set, but you may create brushes which suit your individual style. All brushes are stored in libraries, and all can be accessed through the Brush palette.

Use the Brush Palette

1. From the Window menu, choose Show Tools, Show Brushes, Show Brush Controls, and Show Controls. This will place these four palettes on the screen.
2. Choose the Brush in the Toolbox. (A shortcut to display the Brush palette is to double-click on the brush in the main Toolbox.) Keep the document open.



The palettes offer an array of choices. Notice, however, that every item displayed by an icon also appears in the name list. Sometimes it is easier to choose a brush by name because the icons are tricky to identify.

As you can see, there are five brushes on the front of the drawer. There is a little purple arrow below the drawer-front which "opens and closes" the drawer. Many brushes may be found inside this drawer. The names of the brushes are located in a fly-out menu on the lower-left side of the palette. If you can't figure out what a brush is by looking at the icon, you can choose a brush by its name in this list.

We have chosen the Dry Media brush. The Variants of this brush (in the pop-out menu on the right side of the palette) further describe the type of chalk. Sharp chalk, gritty charcoal, artist's pastels — each brush has its own set of variants that further define the characteristics of the brush.

There are further refinements you can make to brushes. You can define the way it applies to the canvas by fine-tuning additional brush parameters located in the Brush Control palette. This should always be opened to the General Controls drawer when using a brush. The Brush Controls palette is different than the Control palette. The Brush Controls relate only to the brushes. The Controls palette offers options for whatever tool is currently active.

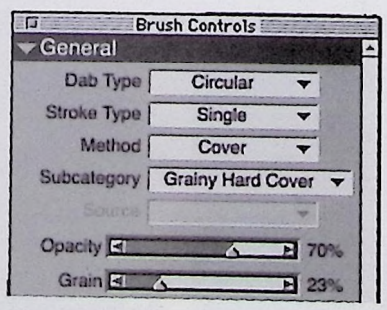
For instance, do you want the color to "cover" the canvas? — or to gradually build up darker and darker? Do you want the color to drip the way water-based brushes do? Or would you like to mask-out, as you would with a traditional frisket? Do you wish your stroke to be soft and not showing the paper texture, or to reveal the grain of the canvas at every stroke? These important parameters may all be set in the Brush Controls palette.

The Buildup method is great for creating contours and modeling.

Make Marks

1. Choose Dry Media from the Brush palette. (Notice that the brush in the basic Toolbox automatically becomes selected.)
2. Next, choose Artist Pastel Chalk from the Variant menu.
3. On the Brush Control palette, open the general Controls drawer. Choose Cover from the Method menu and Grainy Hard Cover from the subcategory.

The keyboard shortcut to display the Art Materials palette is Command/ Control-3.



Select All>Delete quickly clears your canvas.

The shortcut key is Command/Control-A, then the Delete/Backspace key.

The shortcut key to access the Brush tool is the "B" key. To draw straight lines, type the "V" key.

Quickly adjust the size of the brush by holding down the Command and the Option keys or the Control and Alt keys and dragging out a brush. (This command gives you a crosshair that turns into a circle indicating the circumference of your brush.) If a dialog box asks you to build the brush, click OK.

Choose Compact Colors (from the Color section pop-out menu) if you have limited screen space.

4. Let's get some color from the Art Material palette. Choose Window>Show Art Material. Open the Colors drawer and choose your favorite color from the middle area of the Color Picker. Choose the hue from the outer ring of colors, then the specific shade or tint of that hue from the triangle. (For now we'll just grab a color — more color information will be covered later in this chapter.)

5. Make a stroke on your canvas. Try varying the opacity of the color using the Control palette.

6. Run through all the variants (the Square Chalk, the Charcoal, and Basic Crayons) for the Dry Media brush at 100% Opacity; then try them out with different Subcategory settings like Soft, Grainy, and Hard and Flat. If you try these strokes in the same order that they appear in the menus, you will have a great basis for understanding these brushes. Shown below are strokes with the Dry Media using the Chalk variants.

7. Next, try the different methods by setting up your brush like this: Dry Media, Square Chalk, Grainy Hard Cover. Now, make strokes with Cover, Buildup, Eraser, Drip, and Wet methods. Try different opacities. Shown below are strokes with the different methods applied.

8. Experiment painting with different brush types and settings. When your paper is covered with scribbles, delete them and start drawing again. You'll be amazed at all the different kinds of stroke effects you'll discover.

9. When you've finished exploring with strokes, leave your document open to use in the next exercise.

The color swatches do not represent paint or paper color. Paper Color is set in the New dialog box.

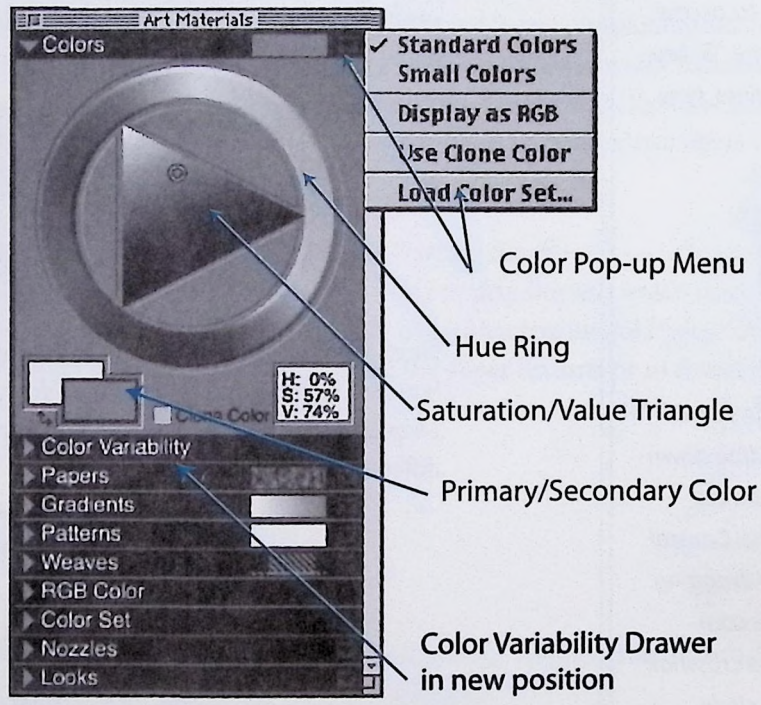
Holding down the Command/Control key turns the Brush cursor into the Dropper tool.

Art Materials Palette

The Art Materials palette contains all the supplies an artist needs to color and fill areas of a painting, such as paint colors, gradiants, and patterns weaves.

Colors Palette

Take a look at the Art Materials palette. The Colors palette should already open from the last exercise, (if it is not, open it by clicking onthe arrow next to the word "colors" on the Art Materials palette) so we will start there. The Standard Color Picker is probably open, and looks like the one pictured below. There are other arrangements of color pickers you can choose from within this drawer. Click the arrow at the top-right of the drawer (section panel) to display the options.



You can choose a different manner of palette configuration, make a new color set, or use the clone color.

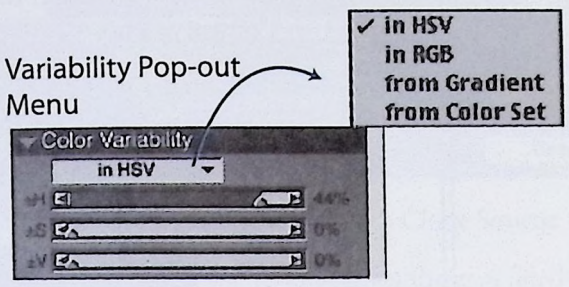
The two overlapping color swatches represent the colors used in two-color brush strokes. If the brush you're using is a simple brush such as the Airbrush tool, the primary (front) color will be applied. If your brush is bristly, like the Loaded Palette Knife, or Van Gogh Variant of the Artist's brushes, the second color is also used.

You can adjust the opacity of the stroke in 10% increments by typing 1 for 10%, 2 for 20%, 3 for 30%, and so forth, while you're in the Brush mode.

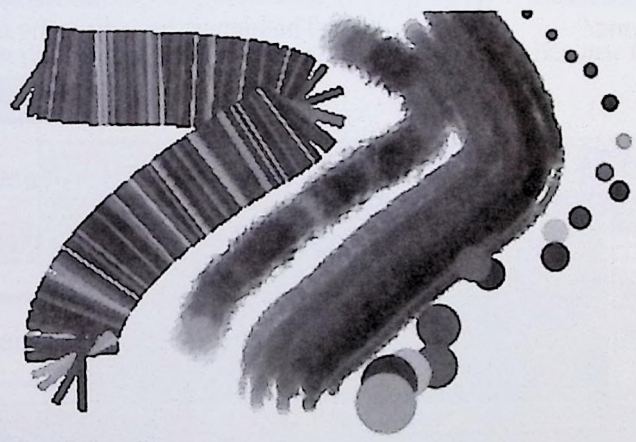
Move any drawer up or down the palette by dragging them. Move the Color Variability to a position beneath the Colors drawer.

Color Variability

Along with the Colors Palette you will use the sliders found in the Color Variability drawer, located further down the list in the Art Materials palette. The default color model is HSV, although other color variations are offered through the pop-out menu as shown below.



HSV stands for Hue, Saturation, and Value. The Hue slider controls the variability of the colors in your stroke. The Saturation slider controls the brightness/dullness of the hue you've chosen. The Value slider adjusts the lightness and darkness of your stroke, based on the hue selected. Paint a few strokes to test these features. The strokes below were made using the sliders.



The brushes are, from left to right: Depth Rake Variant of the Impasto brushes, Large Chalk, Loaded Palette Knife Variant of the brush, and Leaky Pen Variant of the Pen tool.

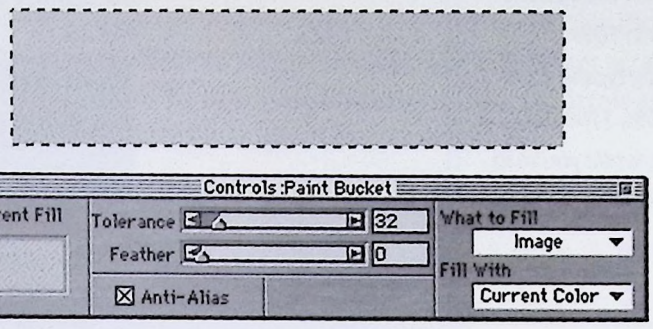
Experiment with Art Materials

1. Paint several strokes with a Loaded Palette Knife brush, varying the Hue, Saturation, and Value sliders. Compare them and continue with different brushes and their variants.

   When you've finished experimenting with the Brush tool, we'll move on to the other tools and methods of applying color using the bucket and selection tools, gradients, patterns, and weaves.

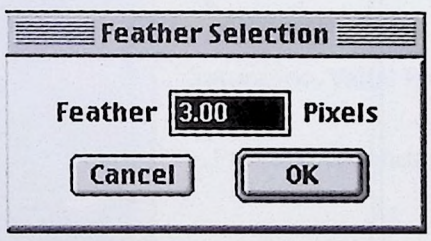
You must first select an area, then fill it with your color, pattern, gradient, or weave. That's where the three image-based selection tools are used. They are the Lasso, Rectangular, and Oval Selection tools.

2. Select the Rectangular Selection tool and drag out a selection.
3. Fill it with the Bucket tool. Be certain that the current color is selected on the Control palette.

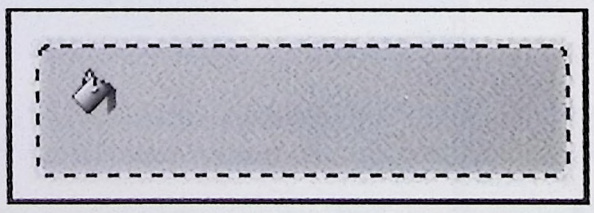


The keyboard shortcut to access the Art Materials palette is Command/ Control-3.

4. From the Edit menu, choose Undo.
5. Choose Feather from the Select menu. This will soften and spread the fill edges. The higher the radius, the softer the edges. Set your feather radius to 3.



6. Click the Bucket tool within the selected area to fill with a feathered edge.



The keyboard shortcut for Fill is Command/Control-F.

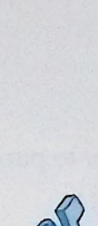
7. Notice how the selection rectangle has rounded edges to represent a softer fill. Undo this action from step #6.
8. In the Control palette, switch the "Fill With" option to Gradient. Click the Bucket tool within your selection area. It is filled with whatever is selected in the Gradient palette.

Press the "K" key to access the Bucket tool.

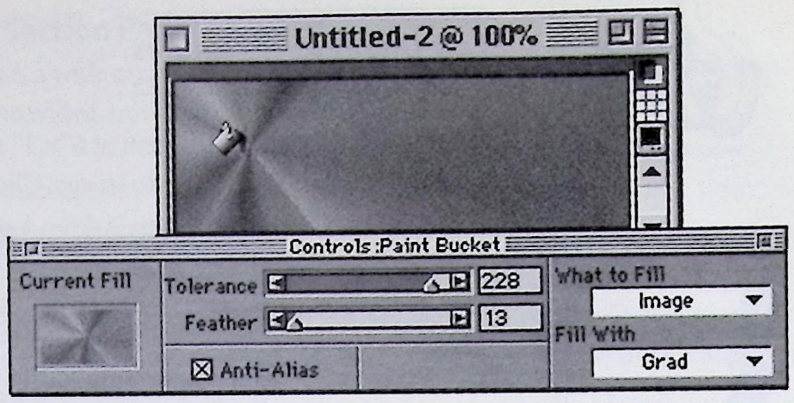
Press the "R" key to access the Rectangular Selection tool.

Press the "O" key to access the Oval Selection tool.

When you fill with a gradient, the position of the Bucket tool governs the center of the gradation.

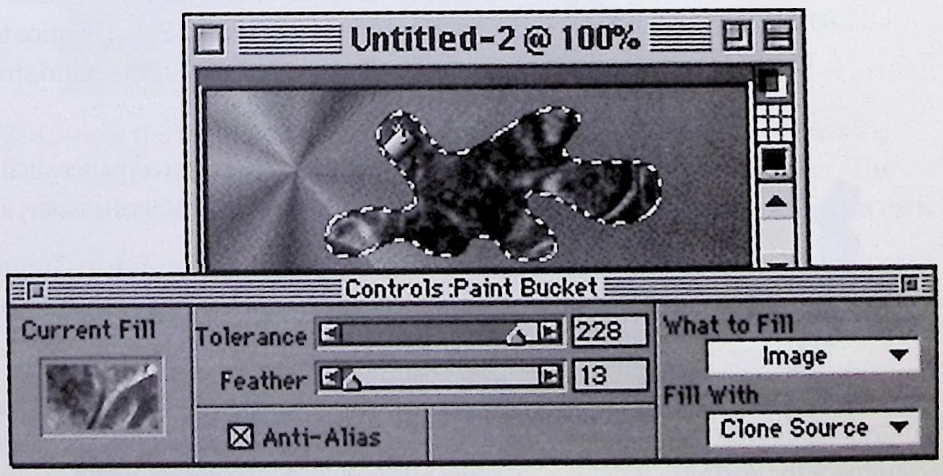


The 2-point gradient reflects the colors you select as the primary and secondary colors in the Color palette.



You may fill an area with a pattern, weave, or a Clone Source.

9. Choose None from the Select menu to deselect the area filled with the gradient. Choose the Lasso tool from the Toolbox. Draw a freeform shape with the Lasso tool. When you let up, the selected area area will be isolated.
10. Next, choose the Bucket tool.
11. From the Control palette, choose Clone Source from the Fill With pop-out menu. The default clone source is the active pattern in the Pattern palette.
12. Click with the Bucket tool, and your freeform area will become filled with the active pattern.



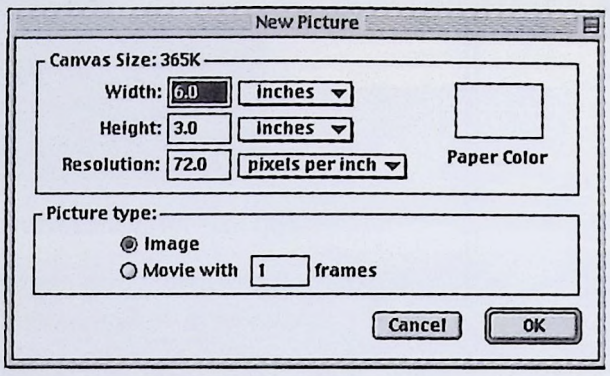
13. Try choosing the Weave and filling with it. When you have finished experimenting, close the document without saving.

Papers Section Panel (Papers Drawer)

One of the features that makes Painter art have a such a traditional look is the paper textures which can be applied to an image, or as independant stroke textures. Although there are many preset paper textures, you have the option to make and store your own.

Test-Drive Paper Textures

1. Create a new document at 6″× 3″ at 72 ppi. Set the Paper Color to pure white and the Picture type to Image. Click OK.



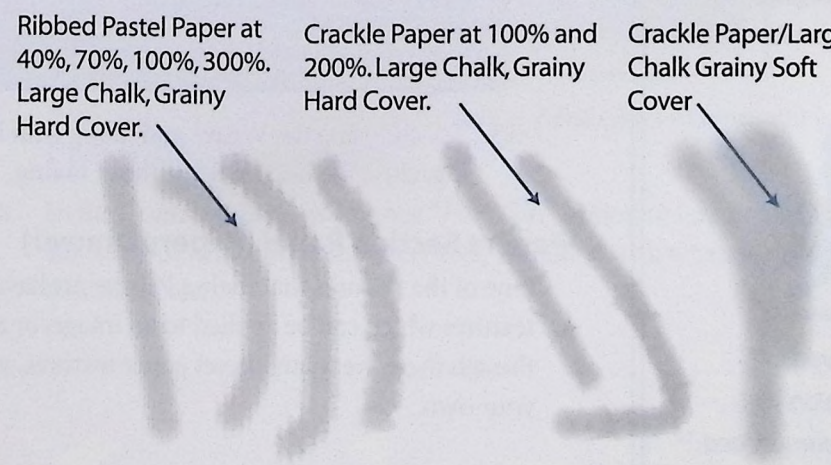
2. Open the Colors drawer, choose a color, then close the drawer.

3. Select a Dry Media Brush, like Large Chalk, set to Grainy Hard Cover (Grainy Flat Cover works well too) at 70% Opacity, and 20% Grain in the Brush Controls palette. Set the Stroke type to Single, the brush size to approximately 10. (Chalk shows the texture very well.)

4. Click on the Paper Section Panel in the Art Materials palette. Choose a textured paper such as the Ribbed Pastel. Notice that the scale is set to 100%. Make a stroke. Change the scale to 300% and stroke again. Click the Invert box and stroke.

6. Switch to a different textured paper such as Crackle and make a couple of strokes at different percentages of scale, and opacity..

7. Now set the Brush Subcategory to Grainy Soft Cover and see that none of the crackle texture appears. Notice that the paper texture becomes evident only after the stroke is applied.



8. Choose Select All and click the Delete/Backspace key to clear your canvas.

Keep the Art Materials palette drawer closed and access its content through the thumbnails on the drawer-front.

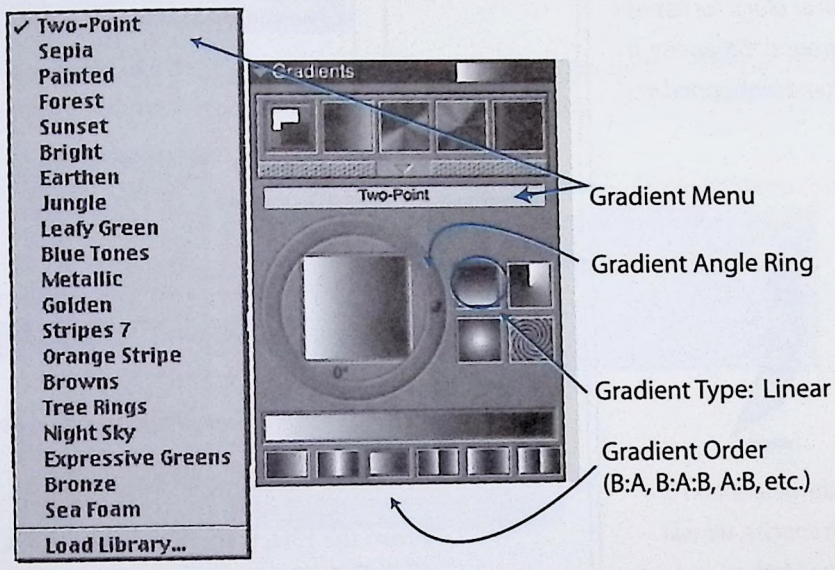
If you have online access you can browse the Web for other gradations, paper textures, brushes, and effects at MetaCreation's Website. Just click the Browse Web button located in the dialog box when navigating through the Load Library command.

Gradient Section Panel (Drawer)

Painter has a wide array of default gradients. You have the option to fine-tune those that are provided, or create your own.

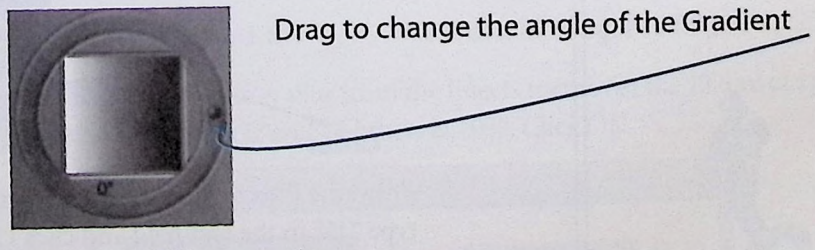
Experiment with Gradients

1. Click on the Gradients icon in the Art Materials palette. Take a moment to open and close the drawer, select different gradients, and view the menu items.

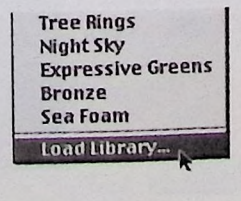


2. Choose the Bright option. You will be presented with a variety of ways the gradient can be expressed. Try the different gradient types and angles. The Preview in the center of the angle ring will reflect your changes. Click on each of the gradient types and gradient orders.

3. When you have settled on one, drag the little red ball around the Preview box to set the angle.



4. Select the Load Library option.



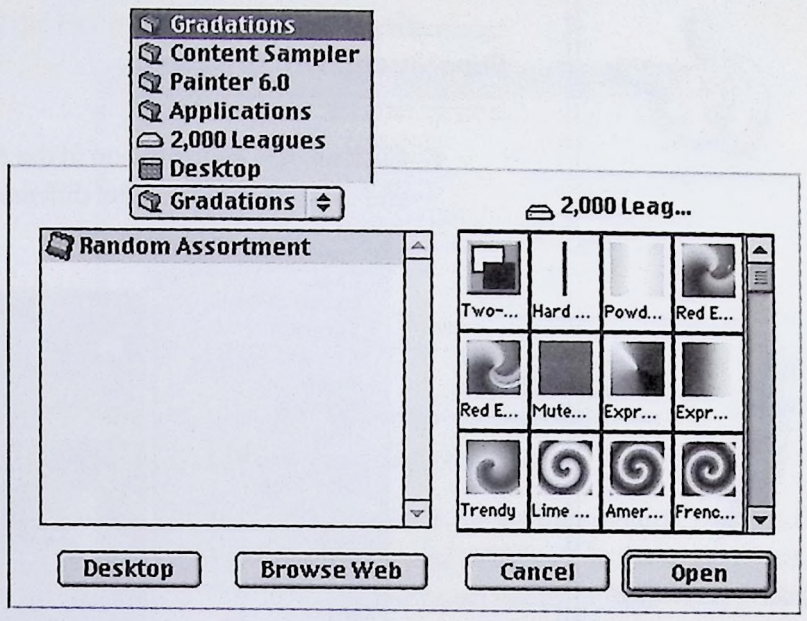
Painter makes it easy to find and reload default libraries. They are always found loose in the main Painter folder. Additional libraries are always tucked away in a folder called Additional Art Materials. To restore Painter's default libraries, choose Load Library, and navigate to the main Painter folder. Here you will see Painter brushes, textures, and patterns. For Painter gradients, look for "Painter settings." On a Windows computer, the words will be abbreviated — for example, "Painter set." These are the default sets. Double-click to load them.

The only time it is acceptable to bump up the resolution of an image is if you plan to blur it for use as a background. Otherwise, it will become bitmapped and jaggie.

To keep the description of the brush concise, we will refer to the Method and Subcategory combined; that is," Cover Method, Soft Cover Subcategory" simply becomes "Soft Cover."

Use the "V" key to draw straight lines. Switch back to freehand painting by pressing the "B" key.

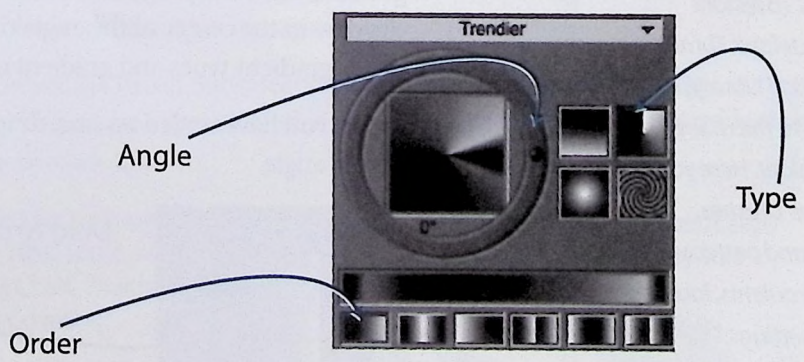
5. Navigate to the Contents Sampler folder (nested inside the Gradation folder within the main Painter folder). Here you will find the Random Assortment gradations. Select them and click Open. They will replace Painter's default gradations.



Your Gradation palette should now show that this new library is loaded.

6. Select the Trendy gradient.

7. From the Effects menu, choose Fill. Choose the Fill With Gradient option and click OK. The gradation will now fill your image area. With the configuration pictured below, it produces the following gradient.



8. From the Effects menu, choose Focus>Super Soften. In the ensuing dialog box, type "15" in the text field and click OK.

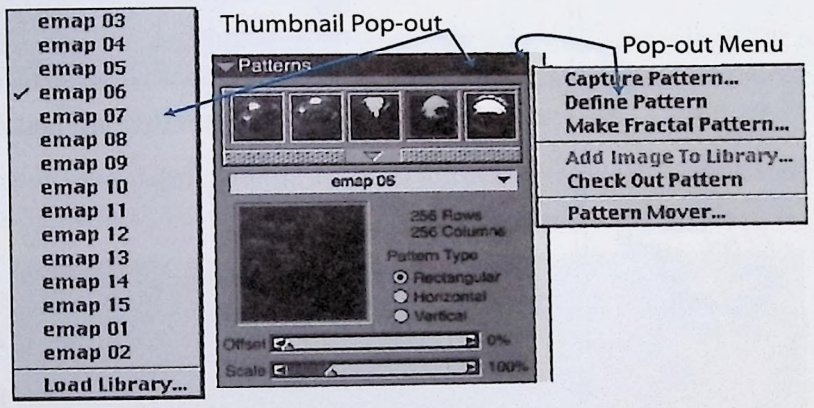
9. Save your work into your **Work in Progress** folder. Name this file "Sunset.RIF." We will use this file as the basis of our first painting.

The Gradient Order expresses the relationship of the colors in a gradient. For example, say blue is "A" and red is "B". An order of A:B:A would be blue-red-blue.

Additional Art Materials

There are twp drawers on the Art Materials palette that contain the Pattern and Weave palettes. These use the same conventions as the Gradients palette — there is a drawer-front, an inside drawer, loadable libraries, and an expanded palette. Each has controls specific to the type of fills it can create. The Weave drawer has different types of fabric and scale sliders to vary the weave. The Pattern drawer is a good source for reflection maps. There are loadable libraries of "e maps" (environmental maps) which are used to achieve advanced fill effects. There are also patterns ready to be used as "wallpaper" in Web pages. Before we begin painting, take a few moments to become familiar with these items.

They behave just like their sibling palettes for paper and gradients. We will use the supplies stored in these palettes in the upcoming exercises.

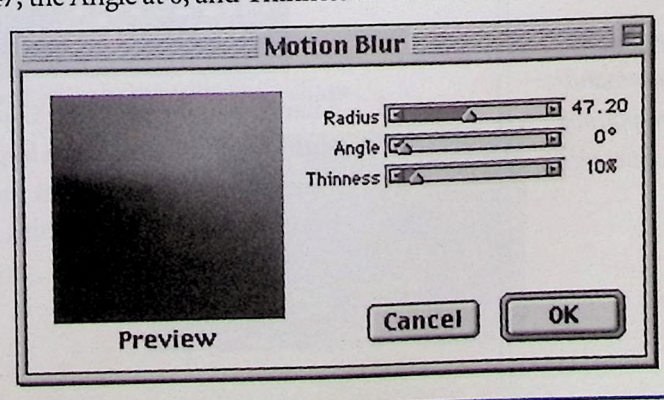


Creating Instant Artwork

There are a variety of techniques that accomplished electronic artists use to relieve the tedium of painting every stroke. We will explore a fun, quick way to create a painting using Painter.

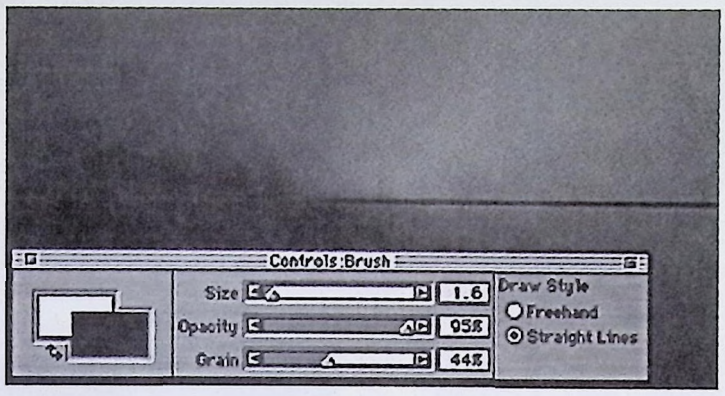
Make the Background

1. Open the image **Sunset.RIF** from your **Work in Progress** folder.
2. Choose Focus and Motion Blur from the Effects menu. Set the Radius at approximately 47, the Angle at 0, and Thinness at 10%. Click OK.



3. Although there should already be a horizon line from the gradient, we will emphasize it with a stroke.With the Dropper tool, sample some dark color.

4. Choose the pencil 2B Pencil Variant. On the Brush Control palette, choose Cover Method, and Soft Cover Subcategory. On the Control palette, set the Draw Style to Straight Line. Draw a horizon line.



5. Save your changes at this time and continue with the next exercise.

Paint Techniques

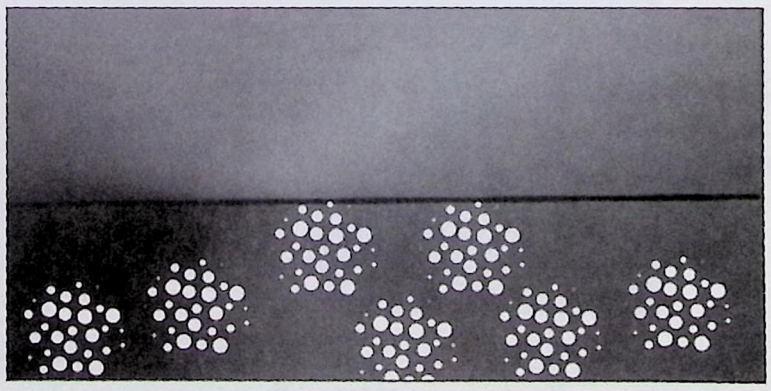
The shortcut key for the Dropper tool is "D."

The shortcut key for the Bucket tool is "K."

If you're using the Bucket tool, press the Command/ Control key to temporarily switch to the Dropper tool.

1. Choose some white from the Color palette.

2. From the Brush and Brush Control palettes, choose Brushes, Dry Ink Variant, Cover Method, and Soft Cover Subcategory. Make sure that the Draw Style (on the Control palette) is set to freehand. Dab dots of white that will become the basis for waves in the Ocean.

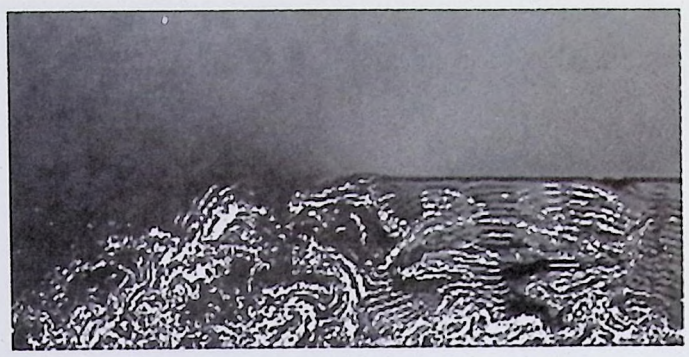


3. Change your brush to the Liquid brush, Grainy Water Variant, Single, Drip, and Hard Drip Method. Use a large (65) brush. Smudge the colors around until it looks like a frothing surf at sunset. You might need to switch back to the Dry Ink brush to add more white.

The shortcut for Undo is Command/Control-Z. The shortcut for Redo is Command/Control-Y.

The Brush tool turns into a Dropper tool if you hold the Command/Control key.

The image should look like this so far.



4. Use the Dropper to sample some light brown. With the Pen Brush, Calligraphy Variant, and Soft Cover, paint two swaying palm trunks (as seen in the illustration below).

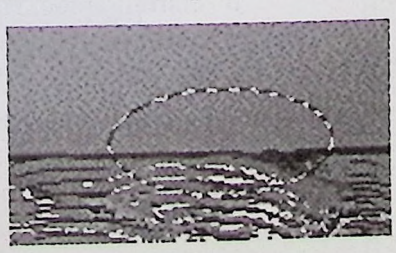
5. Choose a clear green as your primary color from the Color palette. The secondary color should be white. Open the Color Variability drawer to show the Hue, Saturation, and Value sliders. Raise the Hue slider to 10%.

6. In the Brush palette, choose the Artist's brushes, Van Gogh Variant, and Soft Cover method. Paint some palm fronds on your trees, as shown below.

7. Choose Save from the File menu and keep the document open.

Use Selections to Create Objects

1. Choose the Oval Selection tool and drag an oval where you want the sun to set. Don't worry about the full-circle shape.



You can undo as many levels as you have set in the Preferences (up to 32).

Press the "O" key to access the Oval marquee.

Press the "R" key to access the Rectangular marquee.

The Command/Control key takes a "bite" out of your selection; the Shift key adds to it.

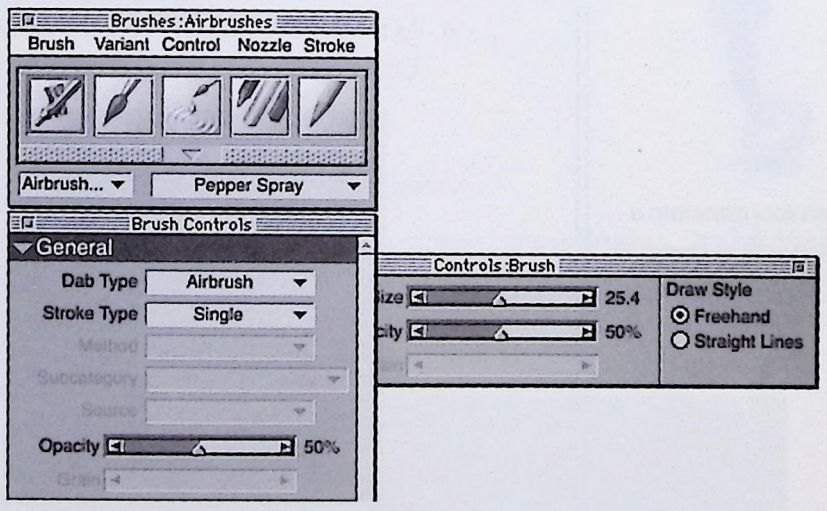
The size and opacity of the brushes are adjusted to gradually add texture. Don't be impatient and add it all at once. The result will appear harsh.

2. Choose the Rectangular Selection tool. Hold down the Command/Control key and drag a rectangle over the area of the lower half of the oval you wish to eliminate. When you release the mouse button, the unwanted part will vanish.

3. With the Dropper tool, sample the brightest part of the sunset. Switch to the Bucket tool and be certain that the Control palette is set to Fill with Current Color. Fill the sun.

4. From the Select menu, choose None to deselect this area.

5. Now for the beaming rays of the sunset, choose the Airbrushes, Pepper Spray Variant. In the Control palette, set your Brush size to 25 pixels, and set the Opacity to 50%.



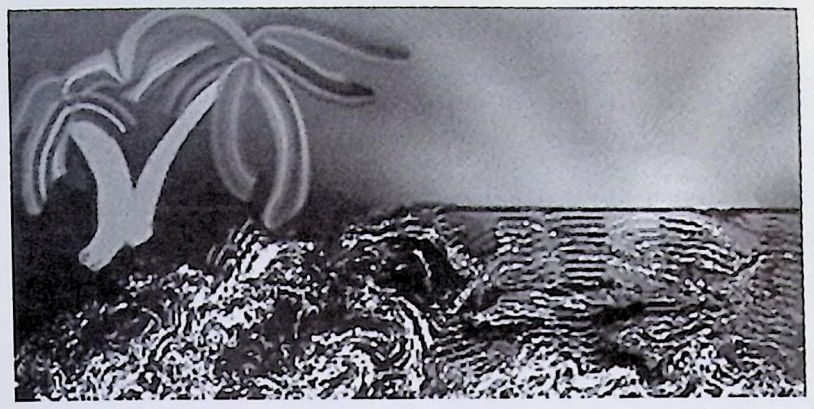
The Brush palette , Brush Controls palette, and the center of the Control palette (when necessary) will be used to illustrate the brush setup for the remainder of the course.

(Note: For the remainder of the course, look to the illustration of the brush settings for a quick visual summary of the settings. Written descriptions will combine method and subcategory into one description; "Cover Method/Soft Cover Subcategory" will be referred to simply as "Soft Cover.")

6. Starting at the center of the sun, draw sweeping strokes out to the picture's edge like rays of light beaming out from the sun. Make a few strokes to see if you like the effect you are building. If you do not, choose Undo from the Edit menu. You can also go back to a previous by choosing Redo from the Edit menu.

Do not draw-out a stroke when the instructions say "dab." A little paint goes a long way in blending colors. You can always add more later.

Here is the sunset at this point:



7. Keep the document open for the next exercise.

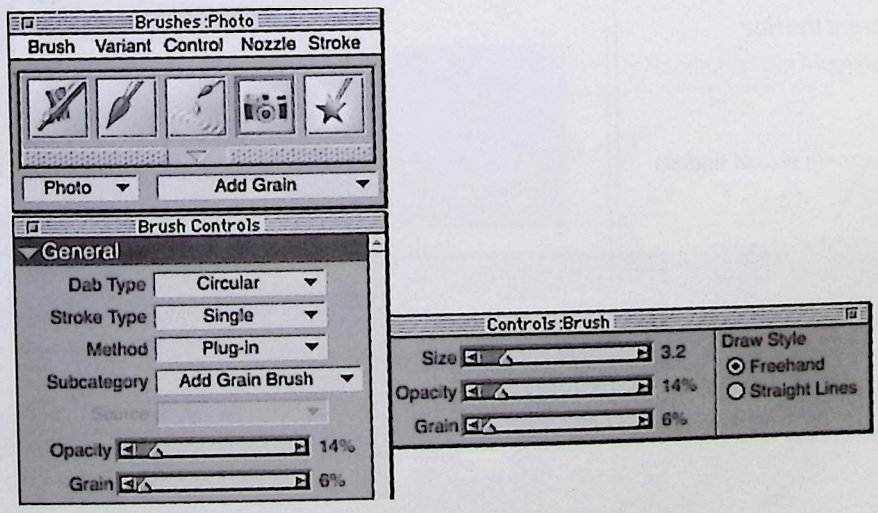
Finishing Touches

Perhaps it needs a little texture and some darkening on the tree trunks and sky, a few gulls, and a few puffy clouds. This is easily accomplished with a few of the special Painter brushes.

Using Photo Brushes

With the Liquid brush most Variants "smudge" the active color. Brushes ending with the word "Mover" smudge only the existing colors in the painting.

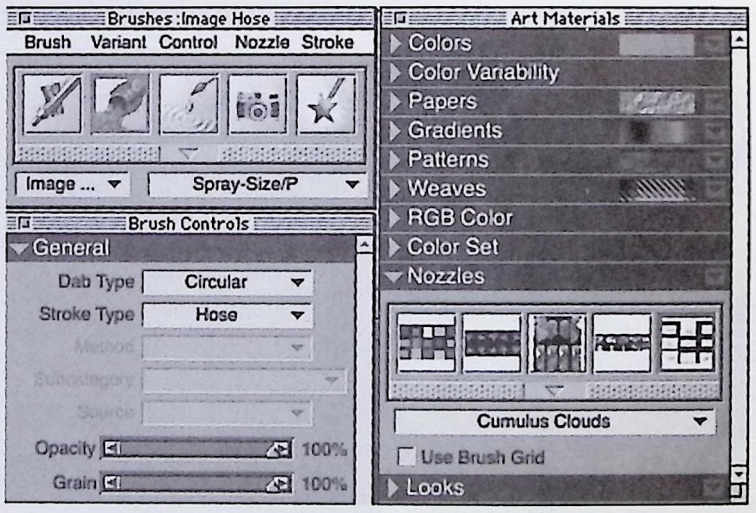
1. In the Brush palette select the Photo Brush. The icon for this brush is a little camera.
2. Adjust your settings to match the ones below.



3. Add a pebbly surface to the tree trunks, fronds, and beach.
4. Keeping the same brush, switch to the Burn variant. Your brush size is 2 pixels, at 5% Opacity. Add shadows and modeling to the tree trunks with this brush.

Hint for Step 3: If you are not pleased with the pebbly texture of your trees, try selecting different paper textures such as Pavement or Handmade Paper.

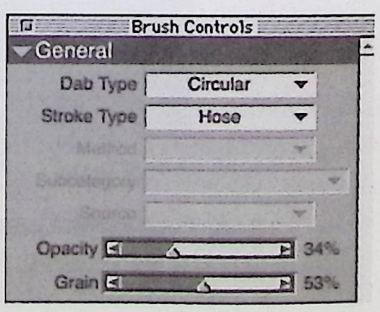
5. Choose the Image Hose to add some clouds. Choose the Spray-Size/P Variant. Set the Brush Controls as shown below.



The Artist's Brushes use two color strokes. You can increase the number by increasing the Hue variability.

6. Next, open the Nozzle Portfolio by opening its drawer on the Art Materials palette. (the example on the right shown above.)

7. In the Nozzle palette, choose Cumulus Clouds. Spray them in the sky, varying their opacity and grain.



Opacity is an option in the Brush Control palette.

It is always a good idea to set the opacity low, then gradually build lighting effects.

As with traditional darkroom work, Burn darkens the image and Dodge lightens it.

Most nozzles are created at 72 ppi. Their apparent size will vary according to the resolution of the canvas where they are sprayed.

The shortcut key to Load a Nozzle is Command/Control-L

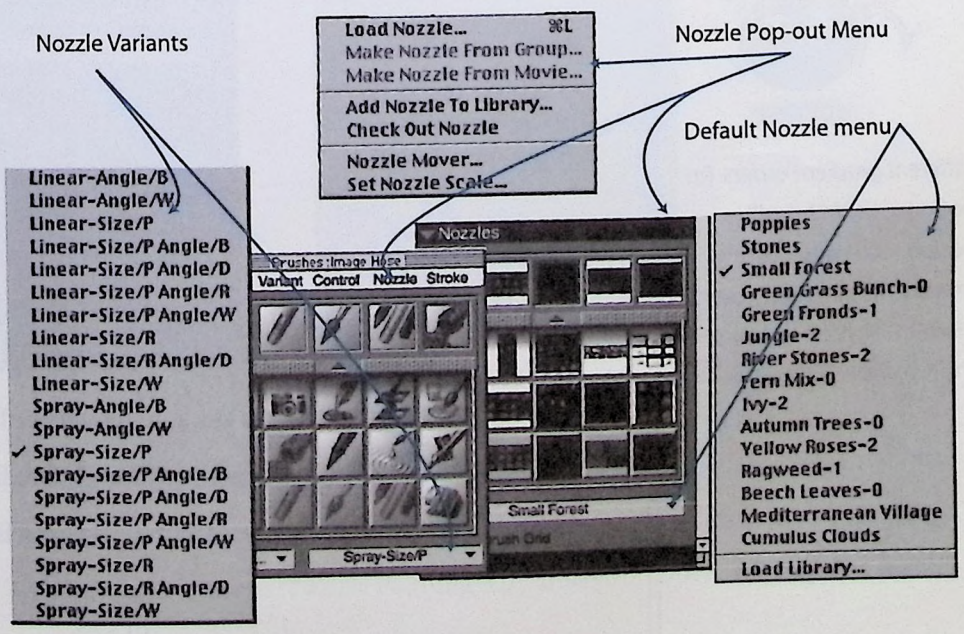
8. When the atmosphere created by the clouds is done to your satisfaction, choose Save in the File menu.

The finished painting.

9. Close the document.

The Image Hose

The Image Hose is a brush that paints with objects. Rather than stroking color it "sprays" small groups of pictures onto the canvas. Each of these groups of similar objects is called a "nozzle." Painter contains a variety of nozzles that can be loaded into the Image Hose. Other nozzle libraries are available from third-party companies and are available on CD-Rom. A cult has developed among creative-types to create and post homemade nozzles on special-interest Web sites dedicated to the Image Hose.



The Image Hose, Variants, and Nozzle palettes.

The Image Hose is a specialized brush which paints with whole images. In the Brush palette, it is the icon that looks like a garden hose.

Because the image is a brush, all the features and characteristics of a brush apply. It has Variants and can be used at different opacities and grain responses. The Brush Controls palette's features are also used to fine-tune this brush. Because this is such a versatile brush, it has its own separate collection of nozzles, located in the Art Materials palette.

Each preset nozzle in the Variants selection is a group of objects arranged by size, color, angle, and orientation. The Variants are grouped in either Spray or Linear. The letters "R", "P", and "D" refer to the way the nozzle sprays out the the nozzle images: randomly, based on pressure, or based on the direction the user drags.

The Nozzles are stored in the Art Materials palette in the Nozzle drawer. Locate it and leave it open on the screen for easy access during the following exercises.

There is a great deal of variation built into the construction of this brush. These are advanced controls which are covered in more depth in the Painter manual.

Prepare to Use the Image Hose

1. Create a new file 500 × 500 pixels at 72 ppi. Leave the paper white and click OK.
2. Select the Gradients palette from the Art Materials palette. Choose the Night Sky gradient. Configure your setup to look like the one below.

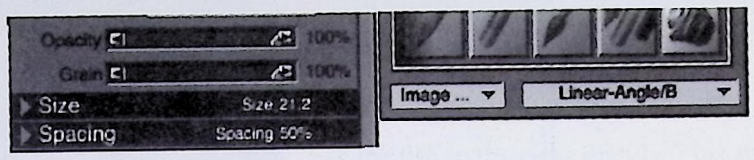
Different gradient orders (at bottom of palette) will position the values of a gradient in different orders. Place the lightest values at the top of the picture.

3. Select the Bucket tool. Click in the center of the canvas to fill it with this gradient.
4. In the Art Materials palette, close the Gradients palette and open the Nozzles.
5. Leave your canvas open for the next exercise.

Change the brush size quickly from the drawer-front by dragging the size numeral left (to lower) or right (to raise).

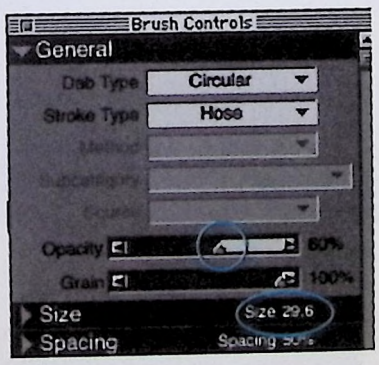
Paint with the Image Hose Preset Nozzles

1. Before beginning this exercise, take a look at the finished work displayed on the following page. In the Brush palette, select the Image Hose. It looks much like a garden hose. Set the Variant to Linear-Angle/B to start. Place your Brush Control palette next to the Brush palette for easy access. You will be controlling the brush size opacity and spacing with this palette.



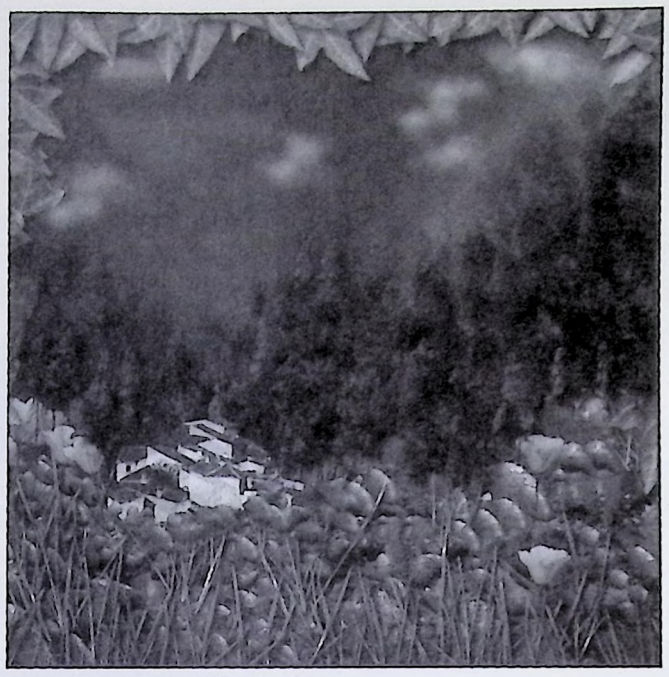
The Brush Control and Image Hose setup.

2. In the Nozzle palette, select the Stones option. Spray them in the foreground, varying their size in the Brush Control palette.
3. Next, choose the Green Grass Bunch-0 nozzle. Experiment with different Variants and scatter some grass amidst the stones.
4. Also, put a few Poppies, Ragweed, or Yellow Roses in the painting.
5. Select the Small Forest nozzle, set the Variant to Linear Size-P, and paint the first trees in a mountain forest toward the middle of the painting at the default Size and Opacity.
6. Adjust the Opacity slider on the Control palette to about 60%, and then lower the Size. Paint a row of trees. At these settings, the trees recede into the distance.



Vary the size of the nozzle (use the Scale Slider on the Nozzle palette) as you use it for a more realistic effect.

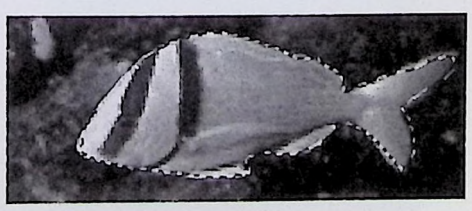
7. At a slightly reduced Opacity, paint the Mediterranean Village. Set its size to about 65 and its Variant to Linear-Angle/W.
8. With Ivy-2, Jungle-2, Beech Leaves, or one of the other nozzles, create a border.
9. Finish the illustration with a few cumulus clouds. Vary their size and opacity.
10. Save this picture as "Nozzle Painting.RIF" into your **Work in Progress** folder. Close the document.



The final Image Hose painting.

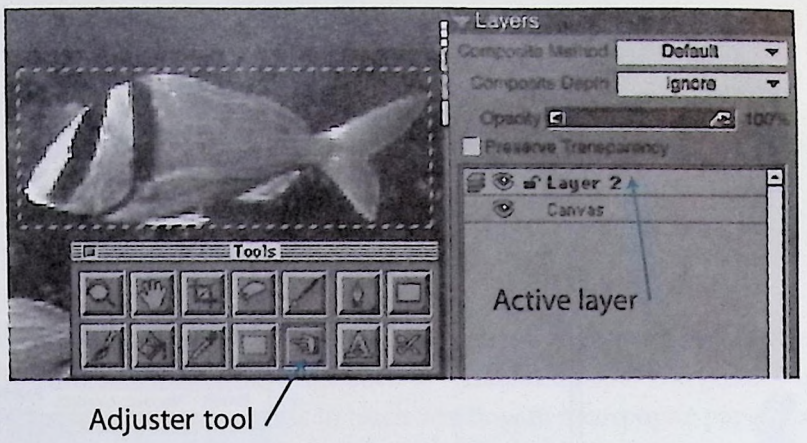
Make Your Own Nozzle

1. Open the image called **Reef.TIF** located in the **SF-Painter** folder.
2. Open the image called **Reef Fish.TIF** located in the **SF-Painter** folder.
3. Magnify the **Reef Fish.RIF** picture by clicking on it with the Magnifier tool.
4. Select the Lasso tool and trace around one of the center fish to select it. When you let up, your selection will be highlighted.



5. Click on it with the Adjuster tool to turn it into a layer.

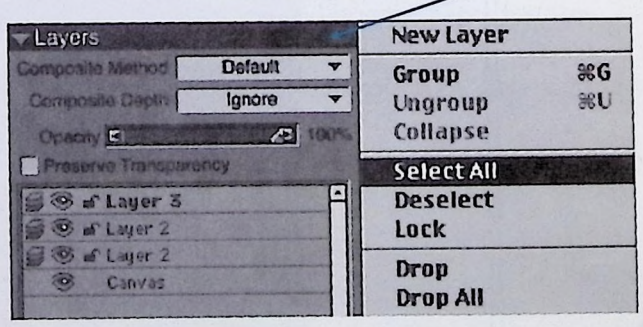
Select as well as you can with the Lasso tool. As we move more deeply into Painter's tools, we will cover masking for more sophisticated selections.



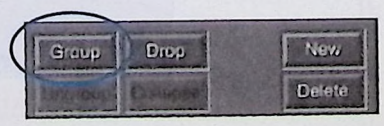
Adjuster tool

6. Press the Option/Alt key and drag the fish to the right slightly. This action makes a copy of the layer. This copy will be named the same as the other layer. The copy is the top layer and is also the active one.
7. With this second layer active, Choose Effects>Orientation>Flip Horizontal.
8. In the Layers list click on the canvas, making it the active area.
9. Choose the Lasso tool. Select the fish toward the far left. Click on it with the Adjuster tool to turn it into a layer.
10. There are three layers in the Layer List. Shift-click on their names to select them all, or choose Select All from the Layer pop-out menu.

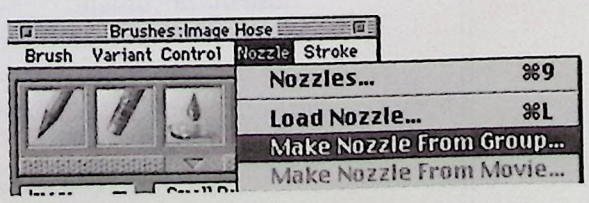
Press here for Layer Pop-out Menu



11. Press the Group button at the bottom of the Layer List.



12. Return to the Brush palette, and from the Nozzle pull-down menu, choose the Make Nozzle from Group option.



The shortcut to access the Lasso is the "L" key.

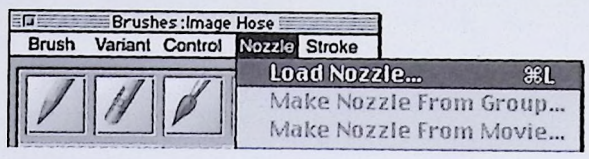
The shortcut to access the Magnifier is the "M" key.

Don't worry — the new document containing the nozzle layers will carry the background imagery — but it is masked and won't appear in the nozzle.

13. A new file will be created that contains the contents for your new nozzle. Click on it and save it as "Fish Noz.RIF" in your **Work in Progress** folder.

Use a Custom Nozzle

1. Make the **Reef.RIF** file active.
2. In the Brush Palette Nozzle pull-down menu, choose Load Nozzle.



It is not necessary to "Add a Nozzle to Library." Simply use the Load Nozzle command.

3. Navigate to the **Fish Noz.RIF** file. Select it and click Open.
4. Be certain the Brush tool, the Image Hose, and your favorite Variant are selected, then begin painting. The fish toward the front should be 100% Opacity (on the Control palette) and fish that appear in the distance should be less opaque.

Final reef picture with homemade nozzle.

The Variants control the spacing of the nozzle images so tightly, they overlap. Others place nozzle elements more randomly. Experiment to find what works best for your application.

5. Save your new work as "Final Reef.RIF" into your **Work in Progress** folder, and close the document.

Chapter 4

Surface Control

Chapter Objective:

To introduce you to the many tools Painter has to create the surface effects reminiscent of traditional media such as watercolor paper and gessoed canvas. The purpose of this chapter is to teach you how to incorporate paper textures as you make brush strokes, or, afterwards, using the Surface Control feature. Using this feature to create 3-D type will also be explained. Creating your own paper texture and using it in an illustration is will be addressed in Chapter 4. Enhancing your image with lighting effects and dynamic layers will complete your picture. These techniques are fundamental to illustration requirements. In Chapter 4, you will:

- Learn how to access the features in the Paper Texture palette, including loading libraries, and creating and using original textures.
- Learn how to create surface texture in pictures using the Surface Control feature in the Effects menu.
- Learn how to create 3-D type and original paper textures.
- Understand how to use lighting controls to enhance your artwork.
- Become familiar with dynamic layers and how to apply them.

Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

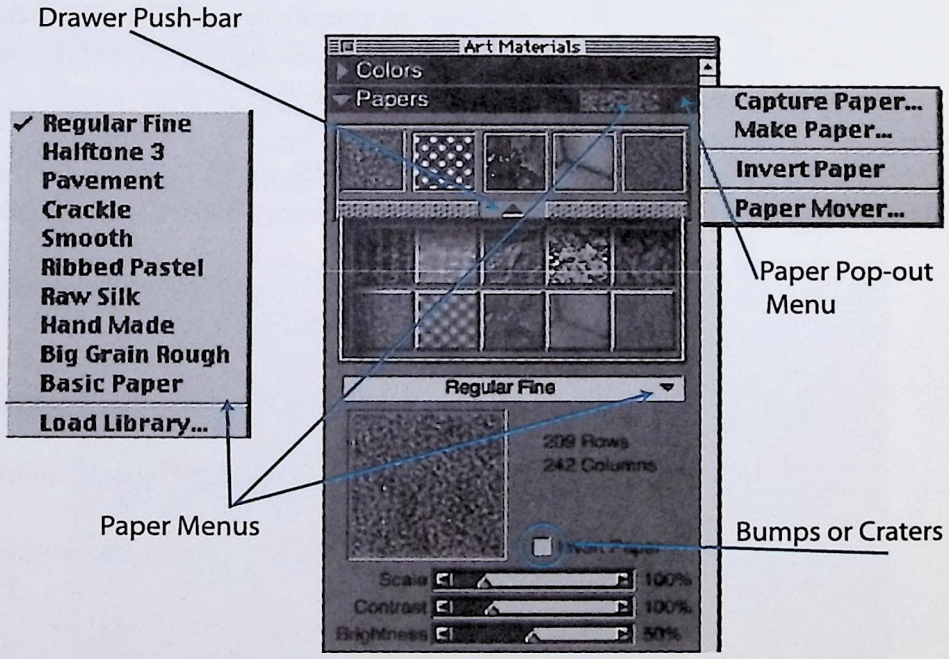
Surface Control

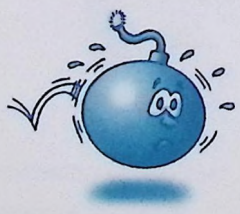
The ability to apply textural interest to your images in a selective way (where you want it, exactly how much, and from which particular direction) is perhaps the leading reason graphic artists and illustrators appreciate Painter. Images created with the computer no longer have that "slick" mathematically-calculated look associated with electronic art.

Most artists use both Grainy brushes and the Surface Control feature while making an illustration; it helps the texture retain its authentic characteristics.

The Paper Palette

The Paper palette, located within the Art Materials palette, allows you to create the look of a wide variety of substrates — from watercolor paper to nubby canvas. You can easily make your own paper from scanned sources, or from hand-painted textures which you can then capture and load. This is the Paper palette.





If you erase your strokes, the paper texture will be erased as well.

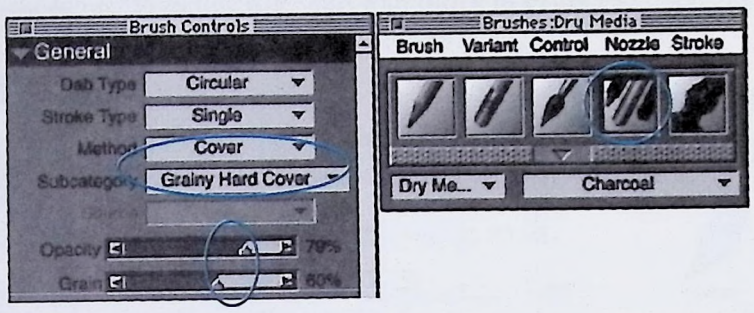
Like any other palette, the Paper palette offers you the option of choosing your art supply by clicking on the icon or selecting it by name from the list. The last item in this list is always the Load Library command, which allows you to navigate to other paper libraries.

At the bottom of the Paper palette are additional controls that allow you to scale the paper texture and to specify whether it is normal or inverted. Painter sees a paper texture as a series of bumps and craters — the brush stroke washes over the surface and colors the tips of the bumps. The craters are not filled. When you invert the grain, the craters are filled, and the tips are ignored.

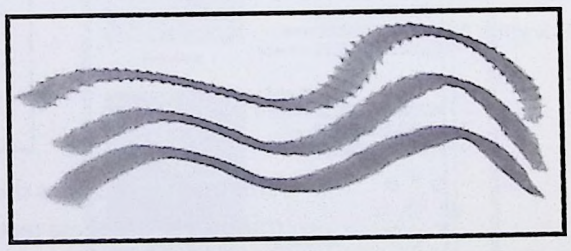
Additional features such as those to capture and make paper, and the Paper Mover, are located in the fly-out menu at the top of the Art Materials palette.

Work with Paper Textures

1. Open a new document. Make it 4″ × 3″ at 72 ppi with the Picture type as Image and white paper.
2. On the Art Materials palette, in the Paper subpalette, choose the Handmade Texture either from the icons or from the name list.
3. From the Brush Controls palette, select Dry Media, Charcoal using these settings:



4. Select a bright, clear red, and make a few swoopy strokes on your canvas.
5. Next, change your paper texture to Ribbed Pastel and make more strokes. Follow these with a few strokes rendered by the Big Grain Rough paper texture.



Notice how the texture appears when you make the stroke.

6. Experiment with various brushes on different textures. To access other papers, choose the Load Library command at the end of the Paper Name list.
7. Navigate to the Content Sampler folder located in the main Painter folder on your hard drive. Inside you will find a folder called Paper Texture Libraries. Within this folder you will find two paper libraries to work with.
8. Load the Awesome Papers by selecting it and clicking the Open button.
9. Try a few of these textures with your charcoal. The Brains and Icicles features are especially attractive. (Note: your brush size should be set to about 20, and the opacity should be lowered to about 40% or the strokes will not show well.)
10. Leave your file open for the next exercise.

The shortcut for the Art Materials palette where the Paper palette resides is Command/Control-3.

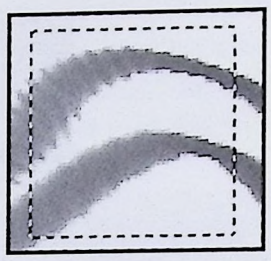
The Paper Mover allows you to arrange paper textures into convenient folders for specific types of projects, such as rough paper, watercolor paper, linen paper, or hot press paper.

Custom Paper Textures

Using preset paper textures is fine for most projects. The ideal paper texture is one you make yourself. Painter offers an efficient way to generate custom paper textures.

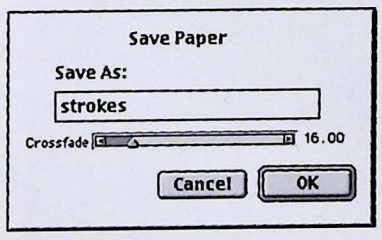
Create Paper Textures

1. With the Rectangular selection tool, select an area of these strokes made earlier in this exercise. Make your selection approximately 200 pixels square.



Limit the number of items in a library — especially the one designed to load upon launching the program. Large libraries will slow your computer to a crawl.

2. From the Paper pop-out menu located at the top right of the palette, choose Capture Paper. Name your texture "strokes" and leave the crossfade set to 16. Click OK to exit the dialog box.



3. This texture becomes the last texture in the Paper Texture menu. Take a few minutes to use these textures with your charcoal brush, and experiment with the grain slider on the Control palette during this step.

4. When you are finished experimenting with these textures, close your document without saving.

Keep your Captured Paper to no less than 200 pixels square. Smaller than that, and the repetitions become obvious. (When the Rectangular Selection tool is active, the Control palette displays the dimensions of the selection.)

Surface Control

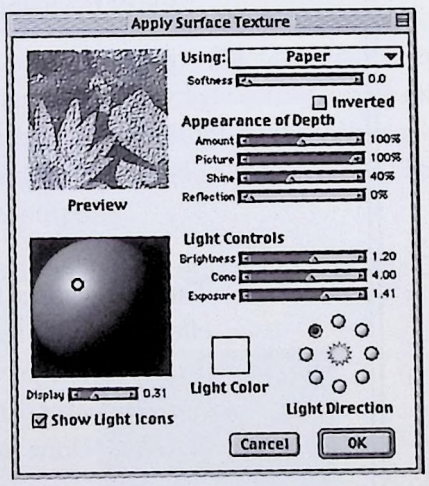
In addition to creating textures in conjunction with the brush stroke, Painter will create a texture for your image. This surface will be based on the paper texture, the 3-D brush stroke, the image's luminance values, the clone source's luminance, or on a user mask that you create.

Hint for Step #4:

The Drawing Paper Library is an additional collection of paper textures that look like natural media.

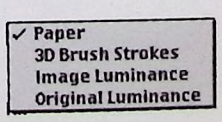
Use the Surface Texture Dialog Box

1. Open the image **WaterLilies.TIF** from the **SF-Painter** folder.
2. With the Crop tool, remove the white border and copyright notice. Drag a selection around the area you wish to keep. Don't worry if it is not exactly accurate. Once you release the mouse (or stylus) the selection is editable. When the image is surrounded, click inside the selection and the excess border will be cropped away.
3. Save the file as "Waterlily.RIF" into your **Work in Progress** folder. Don't forget to change the format to RIFF in the Save As dialog box.
4. Locate the Paper palette and load the Drawing Paper Library. (Click Load Library at the bottom of the Paper Texture menu. Go to the main Painter folder>Content Sampler folder>Paper Texture Libraries>Drawing Paper.) Click OK.
5. Place this palette so it is entirely visible on the screen.
6. Choose Effects>Surface Controls>Apply Surface Texture.



The upper third portion of the box contains the controls for the settings used to generate the texture; including the paper chosen in the Paper palette, a 3-D brushstroke, the actual image luminance values, or those taken from the original (clone source). The middle portion of the box offers settings for the amount of the effect, picture, shine, reflectivity, or active pattern. The bottom section controls the angle and color of the light source.

7. From the Using pop-out menu, choose Paper.



Painter gives you the ability to access items in open palettes while you are within an already open dialog box. This idea is new to users who are used to having to quit out of dialog boxes to change an item not within that box. This feature allows you to experiment with various effects and brushes before deciding on the final effect.

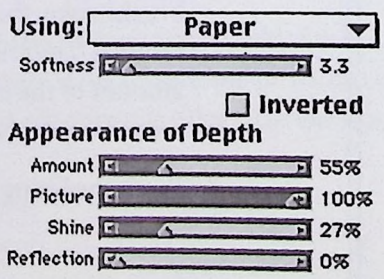
8. From the Drawing Paper library, choose Ribbed Deckle. Note how the paper texture looks on the water lilies in the preview box. You can change the part of the canvas visible in the preview window by placing your cursor within the box and "pushing" or "dragging" the image until the desired area appears.

9. Try other paper textures. Remember to try scaling the texture and inverting the grain in the expanded part of the Paper palette. After this texture workout, set your paper to the Sandy Watercolor paper at 100%.

10. The sliders directly to the right of the Preview box (in the Surface Texture dialog box) dramatically affect the manner in which the paper texture is rendered. The Softness slider set to zero produces a thin, hard black edge to the texture — as if it were sharply focused. The higher the setting, the "puffier" the texture becomes until it is totally diffused with soft highlights. Change this slider and observe the shape of the highlights.

The sliders under the Appearance of Depth heading control the amount of effect needed to render in the image, the percentage of the picture's color to display (lower percentage means a darker image), the amount of shine the surface of your canvas reflects, and finally the reflection percentage of the active pattern or clone source.

11. After sliding these controls and observing the resulting effects, set them to read as shown below.



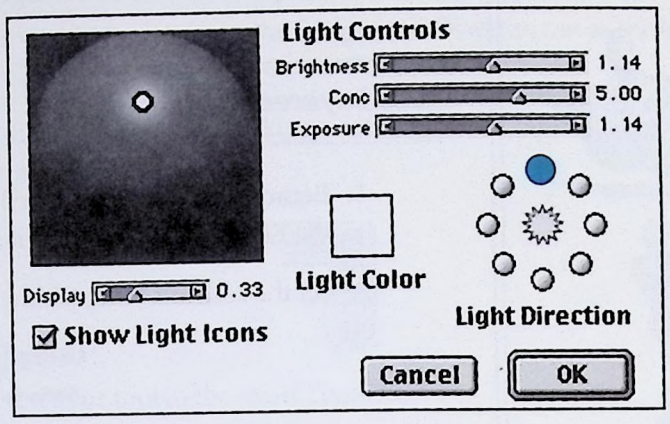
The shortcut for the Hide Palettes is Command/ Control-H.

The illustration in Step 11 shows the Light Controls at their default values.

Use the grid to find the intersection of the X and Y axis.

The key command for the Surface texture dialog box is Command/Control/Shift - S.

The next set of controls are the lighting controls. These sliders control the brightness of the light source, the "Conc" (abbreviation of "concentration" — another way of thinking of it is the "beam-spread"), and the Exposure, which adjusts the overall lighting from the darkest to the brightest values.



12. Move these controls around to get a feel for how they affect the image. Reset the Lighting sliders to their default positions so the next controls are easy to see.

    The third control is the Lighting Sphere pictured above with its various controls. You can drag the little light around on the surface of the sphere until your lighting has the correct direction. Alternately, choose the light direction using the sun and position buttons. The color of your light source can be specified in the Light Color box. The Display sliders affect only the way the Lighting Sphere previews the light position. Darker displays more subtle nuances of light. The default is usually adequate for general purposes.

13. When every control is set to your satisfaction, click the OK button. Your picture should look like this.

14. Save your work before moving on to the next exercise.

Layering Surface Texture

Using Paper Texture on top of detailed imagery may have the unfortunate effect of overwhelming the subject. That is why experienced users *layer* surface effects to re-instate edge detail based on Image Luminance.

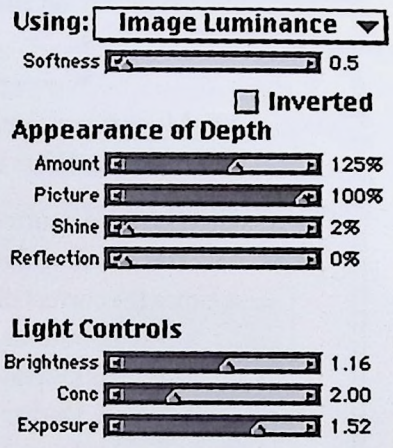
The shortcut key for Save is Command/Control-S.

Lighting effects work along the same principles of physics and optics employed by traditional photography. The kind of light, its distance and elevation from the surface, and the beam spread, all affect the quality and quantity of the light.

The key command to re-enter the last effect used is Command/Control-/ (forward slash).

Use Layered Texture Effects

1. Because the picture needs edge definition, return to the same dialog box. Go to the Effects menu and find it at the top of the list.
2. Set the controls to match the ones shown below.



3. Click OK to apply this surface texture to your picture on top of the existing paper texture. Your picture should now have emphasis on the edge and additional paper texture.

4. Save your work. Leave the document open to continue in the next exercise.

Text Effects

Painter offers two different ways to create text effects: text as individual shape-objects and dynamic text. Using text as shapes offers the flexibility to change the size and proportion of each character individually. We will explore this option now.

The shortcut key for the Type tool is "T."

The shortcut to Undo is Command/Control-Z.

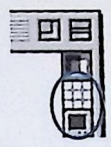
The shortcut to Redo is Command/Control-Y.

If you have trouble with the point size using the sliders, simply select the point size box in the Control palette, type in the number, and press Return/Enter.

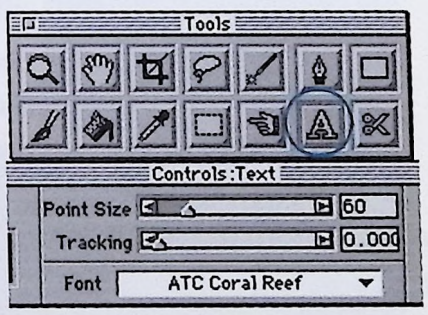
Layers can be selected by either clicking on their names in the Layer list or by clicking on them in the image with the Adjuster tool.

Create Type

1. Show Rulers by choosing them from the Canvas menu.
2. Sample some dark pink from the foreground flower to use as the base color of your type.
3. Display the grid overlay by clicking on its toggle box above the scroll bar at the document's right edge.



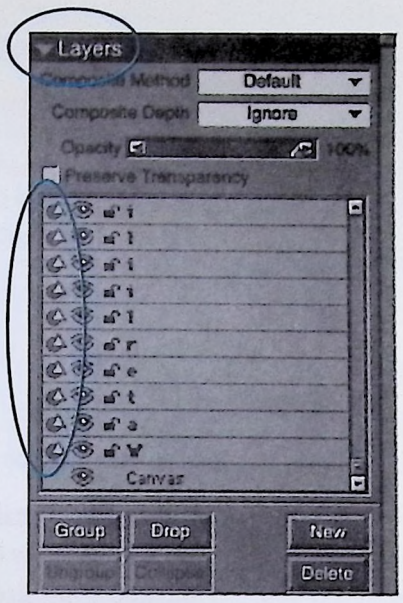
4. Choose the Type tool in the main Toolbox.
5. If the Control palette is not displayed on the screen, toggle it on by selecting Window>Show Controls. It reflects the current tool and the options available include point size, tracking, and the font pop-out menu.



6. Scroll down and select the ATC Coral Reef typeface. Set the point size to 60 and the tracking to 0 (zero).
7. Click your cursor (which is currently an I-Beam) at the intersection of 2″ horizontal, and 6″ vertical. The I-Beam should become a blinking vertical line at this intersection. (note that on the Rulers by the left image edge, and across the top of the page there is a hash-mark where your cursor is currently placed.)
8. Type the word "Waterlilies…" The letters will be pink.

   Painter treats individual letters as shapes. It places each letter on its own layer above the canvas. Imagine the tremendous type effects that can be created with the use of this feature. As with any shape, characters can be scaled and manipulated individually.
9. Open the Objects palette by choosing Show Objects from the Window menu. Next, open the Layers section by clicking on the triangle to the left of the word "Layers."

10. You will notice that each letter is on its own layer and that they are all selected (all are highlighted purple).



The shortcut for hiding the bounding box on Layers is Command/Control-Shift-H.

11. Deselect them all by clicking on the Canvas layer.

12. Select the "W" by clicking on it, either in the picture with the Adjuster tool or in the Layer List. The "W" in your image should now has a bounding box.

Change the point size in the Control palette by selecting the Point field and entering the desired size.

13. In your picture, grab the bounding box in the upper-left corner of the "W" and drag it up and to the left until it is twice as tall and twice as wide.

14. Place the cursor in the center of the letter and move it to the right to kern it closer to the rest of the word.

The shortcut to Group is Command/Control-G.

15. Save your file.

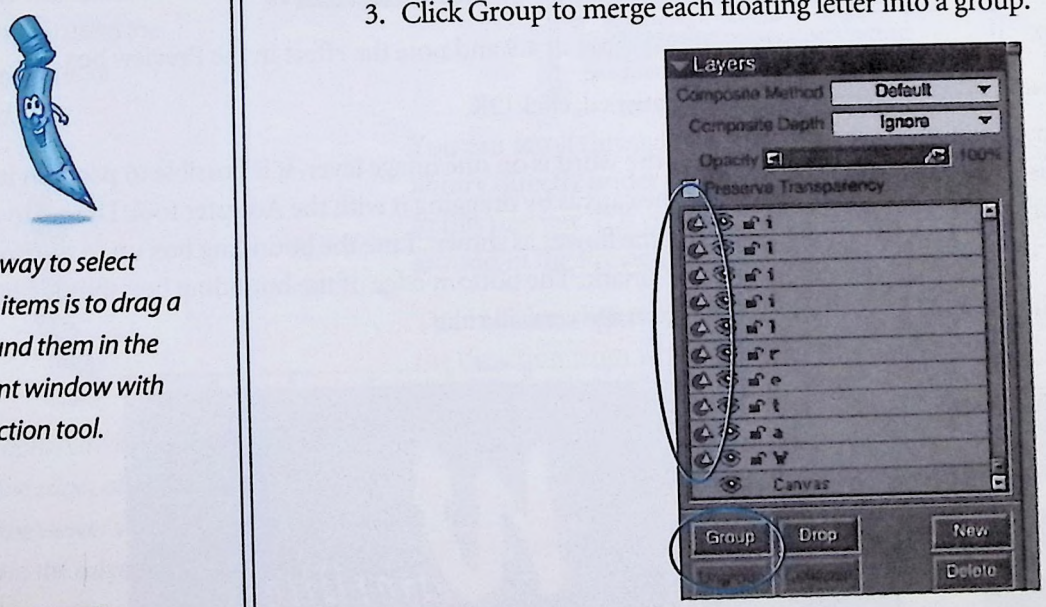
Technique for Creating 3-D Type

When type is dropped into an image it tends to provide a rather bland visual solution; most artists want to be able to create 3-D effects for text. With Painter, you can transform type-shapes to pixel-based objects and create a type-mask for 3-D control.

When applying effects to words globally, they must first be grouped. This organization of shapes is handled in the Objects palette. This palette is home to the controls for masks, selections, shapes, layers, movies, scripts, and net-painting. We will use its features in a basic way to group shapes and to generate a layer mask critical to our type effect.

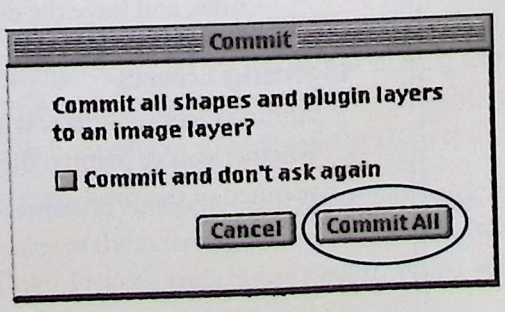
Create 3-D Type

1. Turn off the grid from the toggle in the upper-right corner of the document.
2. In the Layer list, shift-click to highlight all the letters in the word "Waterlilies." Or, choose Select All from the Layer pop-out menu.
3. Click Group to merge each floating letter into a group.



Another way to select multiple items is to drag a box around them in the document window with the Selection tool.

4. Click the Collapse button at the bottom of the palette. The group of shapes collapses onto one layer. At this time, it also makes a mask for the group.
5. A dialog box will ask if you are certain that you want to commit the group to one layer. Click Commit All.



The shortcut for the Type tool is "T" key.

The shortcut for the Control palette is Command/ Control-5.

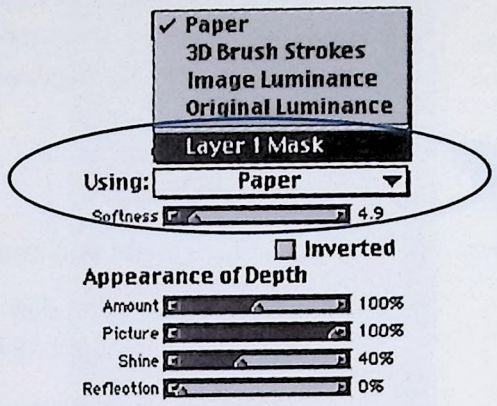
Drag with the cursor in the Preview Window to see the 3-D effect on your type.

Keeping your softness setting between 1.6 and 6.0 seems to work well with most fonts for a 3-D effect. Higher values than 6 create diffuse highlights.

When no layers are highlighted, the base canvas is active. Keep a sharp eye on the Layer palette.

We have created, grouped, and committed these type elements to one layer. A type mask based on the group has automatically been generated by Painter. Proceed with the process of applying 3-D effects in the Surface Control dialog box.

6. Select the Surface Control >Apply Surface Texture dialog box. From the Using menu, choose Layer 1 Mask.



7. Set the Softness slider at 4.9 and note the effect in the Preview box.
8. When you're satisfied, click OK.
9. Because the entire word is on one image layer, it is possible to position it anywhere on the canvas by dragging it with the Adjuster tool. Drag it to a position above the flower as shown. Line the bounding box up to the horizontal tick at the 1.25″ mark. The bottom edge of the bounding box should align with the 3.25″ mark on the vertical ruler.

10. Double-click on Layer 1 and name it "Type" in the Layers Attributes box. Deselect this Type layer by clicking in the Canvas layer. Save your changes at this time, and leave the document open for the next exercise.

Lighting Effects

Adding Lighting Effects is another way to add drama and impact to your illustrations; whether you've painted them from scratch, or are working on an image created from scanned or digitized art.

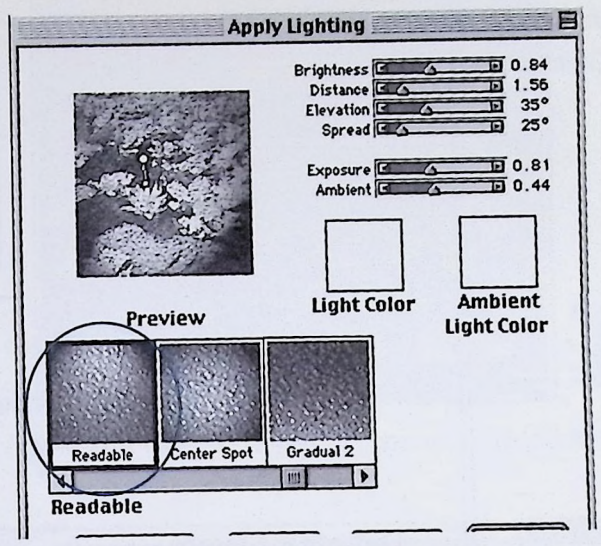
Move layers in 1-pixel increments by using the Arrow keys on your keyboard.

Photographers frequently darken the edges of images to keep the viewer's eye directed to the subject. This is called "vignetting" the picture.

To delete a light, simply select it and press the Delete/Backspace key.

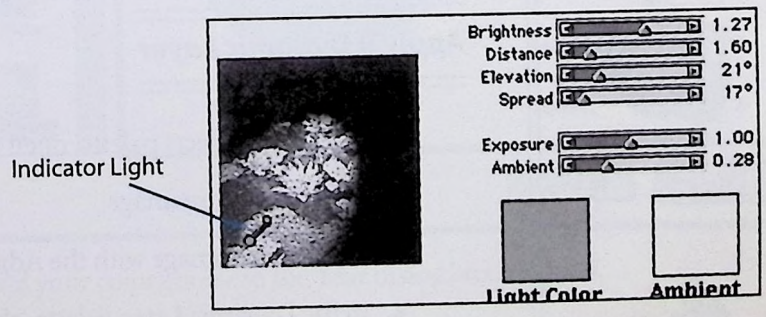
Use the Apply Lighting Dialog Box

1. Be certain that the canvas is the active layer.
2. Choose Effects>Surface Controls>Apply Lighting.



You can scroll through a full set of preset lighting schemes in the viewable library directly under the Preview box. The currently selected lighting is evident in this preview. It is completely editable by dragging the "indicator lights" around in the Preview box, and by moving the sliders.

The Indicator lights move if you drag by the larger end. The smaller end adjusts the direction from which the light is shining.



To make an additional light, click in the preview box. To remove a light, select it and press the Delete/Backspace key.

The sliders control the Brightness, the Distance of the light source from the canvas, the Elevation, (or angle that the light is shining from, 90 degrees is straight down), the Spread, (or angle of the cone of light), and finally the Exposure, which is how dark or light the picture is overall.

The Light Color box and Ambient Light Color box work in the same manner. To change the color of the active light, click on the box (which brings you directly to the Color Picker), and choose a color. When you click OK in the

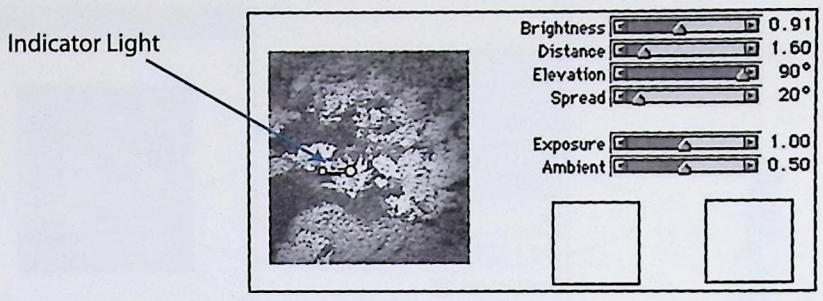
The shortcut key for Select All is Command/Control-A.

Warning: You must Select All and float (Steps 2 and 3) to get the torn edge effect. Do not skip either step!

Whenever a button in a dialog box is outlined, you can press the Return/Enter key to activate the command.

Color Picker dialog box, it applies that color to your light. This choice is apparent in the Preview box. The same sequence applies for the ambient (the general light in the image, not the light created from the new light source).

3. Choose the Center Spot and set the sliders at the following positions. Move the Indicator light directly over the lily and click OK.



4. Save your work and keep the document open for the next exercise.

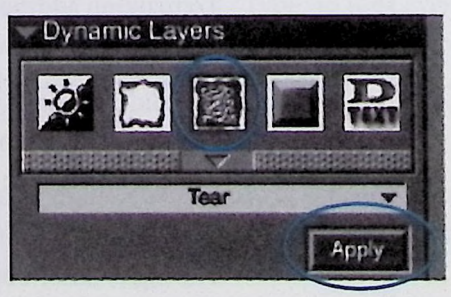
To add a finishing touch to your picture, we are going to create a border effect that looks like torn paper. We will use the Dynamic Layers in the following exercise.

Dynamic Layers

These layers represent a whole new realm of effects that can be applied to images. The effects can be altered as long as the image is saved in the RIFF format. The layers hover over the canvas and underlying layers, and they are editable. When you are certain that you want to keep the effect, you commit the layer. At this time the layer takes on all the characteristics of a normal image layer.

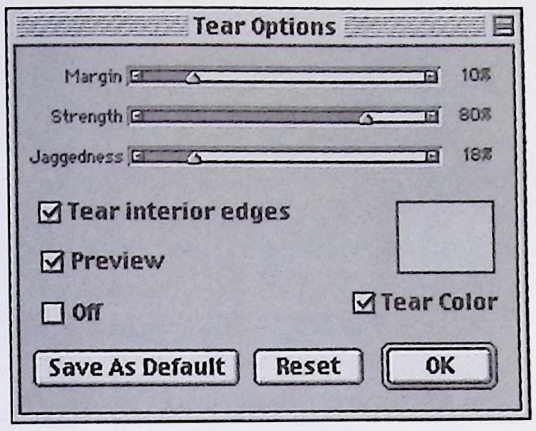
Apply a Dynamic Layer

1. From the Objects palette, open the Dynamic Layer palette.
2. Select the entire image.
3. Click on the image with the Adjuster tool to float it above the canvas.
4. In the Dynamic Layer palette, choose the Tear option.

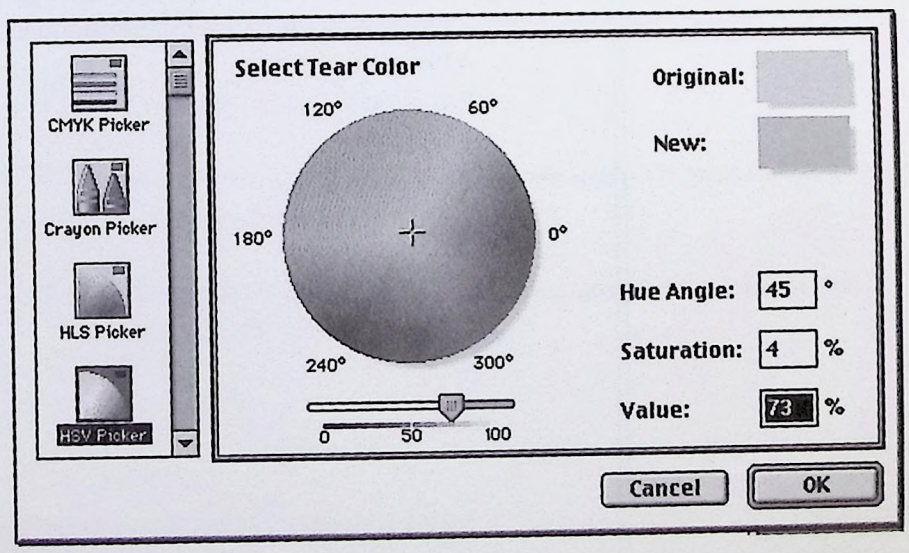


Move the sliders slowly for the effect to be visible. If you drag quickly, the effect moves from where you start to where you finished dragging it without showing the intermediate stages. Adjust the sliders to suite your image. Some jaggedness settings are excessive.

5. On the Dynamic Layer palette click the Apply button. Two things will happen: the Dynamic Layer appears in the layer list above the Group 1 layer, and the Option dialog box for the Tear effect is displayed on the screen. In this box the sliders control the tear margin (width of the torn edge), the strength of the tear, and how jagged it is.

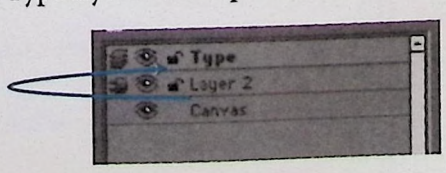


6. If you click on the Tear Color box, you can choose a shade from the Color Picker.



Before you output this image, drop all layers or they won't print.

7. To send your color choice to the Tear dialog box, click OK.
8. When the sliders are set to your satisfaction, click OK in the Tear dialog box.
9. You may notice that the "Waterlilies" text is not visible in your picture. It is hidden under the Dynamic Layer. Choose the Layer palette. In the layer list, click on it and drag the Type layer to the top of the list.



The shortcut for the Screen Toggle Mode is Command/ Control-M.

10. To view your work on an uncluttered screen, choose Window>Hide Palettes, then Window>Screen Toggle Mode.

11. If you like this effect and want to save it, choose Save As from the File menu. Name your file "Torn Edge Waterlilies.RIF" and save into your **Work in Progress** folder.

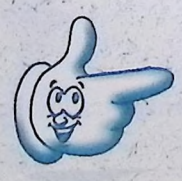
CHAPTER 5

CLONERS

CHAPTER OBJECTIVE:

To provide insight into Cloners and how to call upon this flexible resource during the creation of painting projects. You will explore the use of the clone source as a basis for freehand painting, or as a global effect applied to your artwork. The clone relationship is one of the underlying concepts Painter uses to transform images — a powerful feature for creating paint effects quickly. In Chapter 5, you will:

- Learn to set up a clone and a clone source relationship.
- Use the Tracing Paper feature with a clone.
- Become familiar with the Cloner brushes and Auto Clone.
- Learn to record and play back strokes.
- Become familiar with the Surface Controls in the Original Luminance and the 3-D brush stroke modes.
- Gain an understanding of the clone relationship and how to use this knowledge in the creation of artwork.



PROJECTS TO BE COMPLETED:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

Get into the habit of working on a clone.

1. You should always keep a "clean original."

2. When developing your artwork, you will have additional clone-based choices at your disposal.

Cloners

Cloning is a powerful feature unique to Painter that allows you to create the look of natural-media art based on an original (the clone source). Cloning allows you to take imagery from the source file and apply it to a destination file in a variety of ways.

The simplest use of this clone/clone source relationship is when a clone is made as a duplicate file — not a simple copy, but a linked duplicate having a pixel-by-pixel correspondence to its clone source. This correspondence is the strength of the feature as it allows you to use a number of options.

The first is the Cloner brush feature. These brushes recreate the clone source imagery stroke-by-stroke based on the pixel information in the clone source.

Regular brushes can be turned into Cloner brushes by choosing Cloning as the method and turning on the Clone Color option in the Color palette.

The second is the Auto Clone feature which speeds up the process of applying painterly effects. This feature can be used over the entire canvas, or within a selected area.

The third feature is Tracing Paper. With its many useful functions, Tracing Paper becomes an option once a clone has been established.

Finally, three features in the Surface Control dialog box become available in the Using menu: 3-D Brushstroke, Image Luminance, and Original Luminance.

Cloning can be used to transfer imagery from one picture to another, or from one area to another within a picture, much like a rubber stamp tool. The Fill command contains an option to fill a selected area with the clone source. Additionally there are Super Cloners that apply clone source imagery along a reference point determining the skew, scale, and rotation of the cloned imagery.

Files having clone source/ clone relationships must be the same in pixel size and dimension.

Clone Source as Template

One of the most useful ways to use a Clone Source is to simulate traditional tracing paper — allowing you to actually trace the subject.

Setting up the Clone and Using Tracing Paper

1. Open the file **Stone Archway.TIF** from the **SF-Painter** folder.
2. With the Crop tool, remove the white border and the copyright notice.
3. Select Clone from the File menu.
4. Save your document into your **Work in Progress** folder, naming the file "Clone of Stone Archway.RIF" and save it as a native RIFF format.

Tracing Paper works only if the Clone Source is open. The clone-based features work only if it is open.

Instead of Tracing Paper, some artists choose to Fade the clone back. This feature is located under the Edit menu.

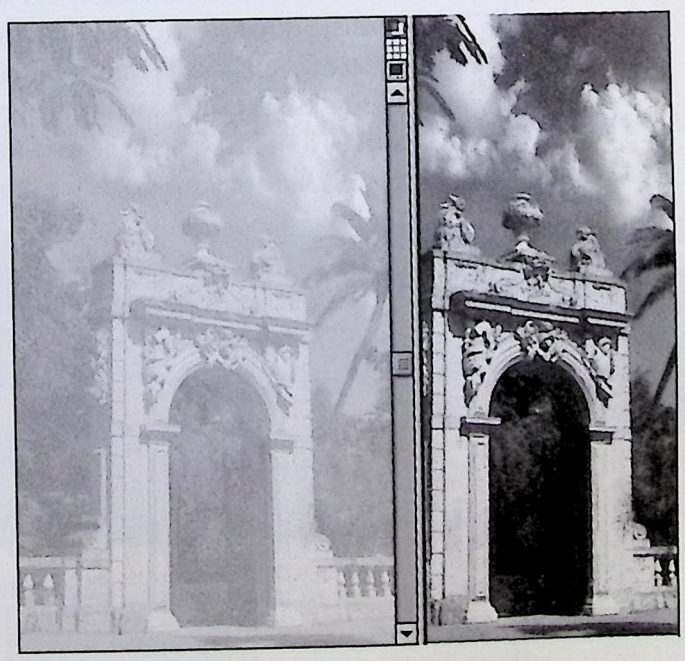
The shortcut to set up Tracing Paper is Command/Control-A, Delete/Backspace, Command/Control-T.

During this lesson we will refer to the file as the "clone." The original will be called "Stone Archway," "the original," or the "clone source."

These two files have a one-to-one pixel correspondence. This relationship exists even if the clone's imagery is deleted. It is linked to the clone source and can use that image information in a variety of ways. Tracing Paper is one, which supplies a ghost of the original image that can be traced and painted over using any brush.

5. To set up the Tracing Paper choose All from the Select menu. This will select the entire clone.
6. Press the Delete/Backspace key to clear the canvas.
7. Under the Canvas menu, select Tracing Paper. A 24% ghost of the original will appear. You can also click the Tracing Paper icon above the right scrollbar to turn it on.

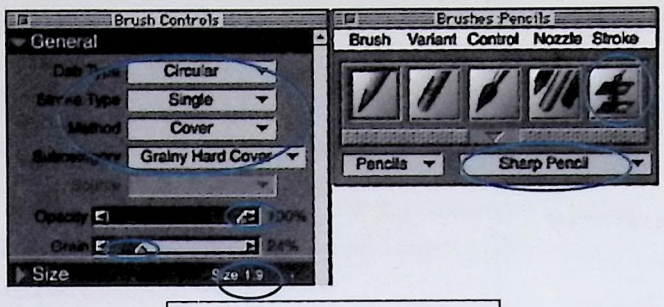
You can trace or paint over this ghost and your strokes will appear at 50% of their opacity. When the Tracing Paper is turned off, they will appear at full strength. Tracing Paper can be turned on and off as many times as is necessary to complete an image.

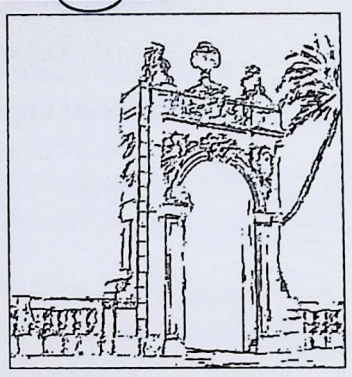


Tracing paper and clone on the left, clone source on the right.

There is no need to switch to the Eraser if you make a mistake. Simply use the "Eraser" method of the brush you're using.

8. Choose any brush you like and vary the type of paper and brush. The sketch below was made using the brush setup as shown:

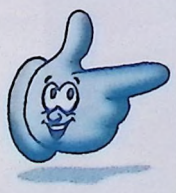




9. When you have finished experimenting with this feature, close this Clone document.

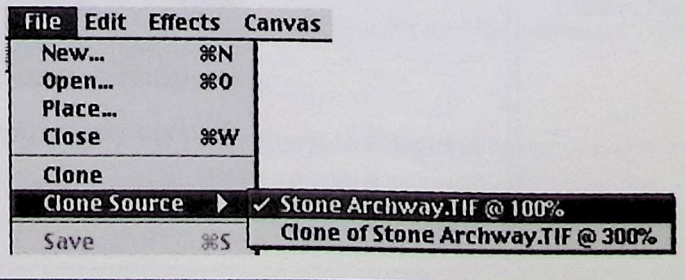
Using Brushes and Cloning

There is an extensive category of brushes devoted to the cloning feature. These brushes reproduce the image information from the original "filtered" through different brush/media combinations. For example, your picture can be cloned using the Van Gogh cloner and it will be reproduced in the brush style of Vincent Van Gogh. These brushes can be used for stroke-by-stroke painting, recorded/played-back strokes, and auto cloning. It is a simple matter to set up a normal brush to use the cloning feature.



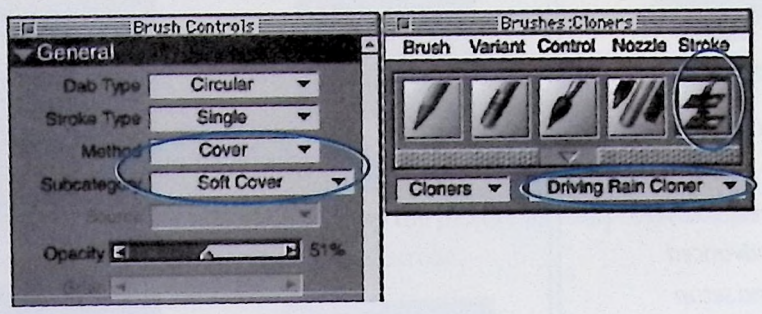
Paint with Cloner Brushes

1. Be certain that the original **Stone Archway.TIF** from the **SF-Painter** folder is open on the screen. Choose File>Clone.
2. Check that the Clone Source is set to **Stone Archway.TIF**.

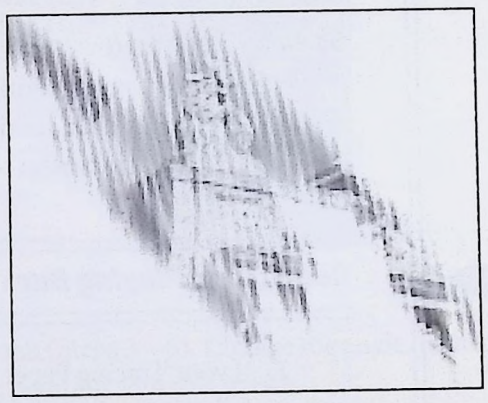


This brush doesn't have to be set to the Cloning Method.

3. Choose Select All, Delete/Backspace, toggle Tracing Paper on.
4. In the Brushes palette, choose the Cloner brushes. Take a moment to familiarize yourself with the variants, methods, and subcategories.



5. Using the Driving Rain cloner, make several strokes on your clone image.
6. Turn the Tracing Paper off and view the work in progress.

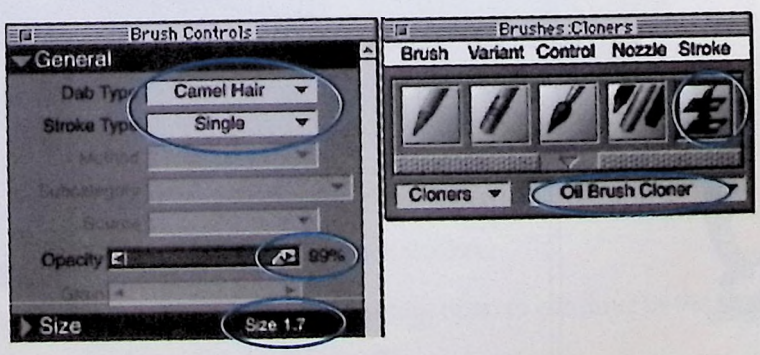


It really looks like a downpour.

Don't forget to have your Control palette available to vary the brush size and opacity.

7. Undo back to the level where the Tracing Paper had no strokes on it.
8. Choose the Oil Brush cloner and set it up as shown below.

The number of Undo's is set to 5 as the default.



For these exercises, avoid using those cloner variants that begin with the letter "x." They have advanced functions and setup considerations. If you want to play with them, consult your Painter manual.

9. Make short, curved strokes in the clouds and sky. Vary the length and direction of the stroke to recreate the look of actually painting with oils. View your work without the tracing paper. Try some of the other cloner variants.

10. Use File>Revert to revert back to the last saved version before continuing with the next exercise.

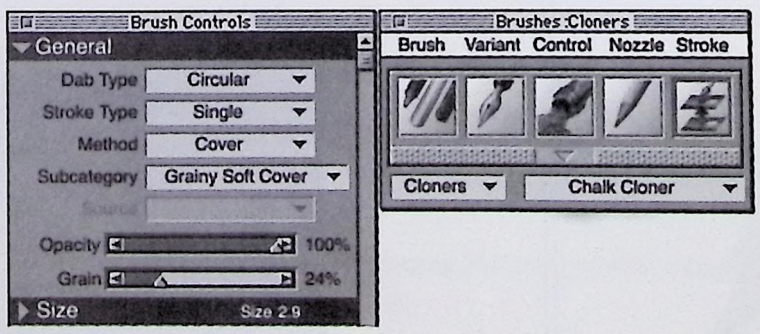
Speedy Painting

The previous type of painting is beautiful, with each stroke carefully placed to create a work of art. However, for those times we need to work quickly, recording and playing back strokes is the perfect solution.

Record and Playing Back Strokes

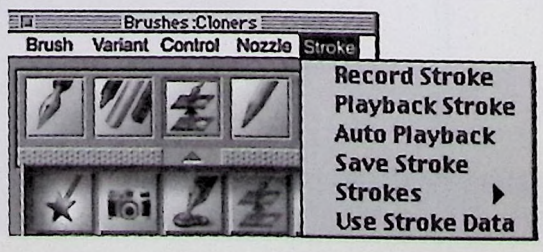
1. If your Tracing Paper is not displayed on the screen, turn it on using the following series of commands: Select All, Delete/Backspace, toggle Tracing Paper on.

2. Choose the following brush and set it up as shown below.



Use Command/Control-Z as a shortcut to Undo.

3. Locate the Stroke menu in the upper-right side of the Brushes palette. Choose Record Stroke.

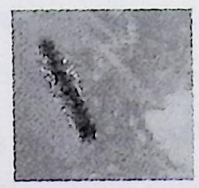


Use selecting to confine cloned strokes to a specific area.

The keyboard shortcut to relink the clone source is Command/Control-Option/ Alt File>Clone.

Note for Step 8: If the Revert Command is dimmed, simply close the clone and create a new one by choosing File>Clone.

4. Make a brush stroke you would like to repeat, such as this simple diagonal stroke.



5. Set the Stroke menu to "Playback Stroke."
6. Click to place this stroke, building up the picture as you progress. Each time you click, it places the complete recorded stroke.

7. Repeat this process (Steps 3 – 6). Change the angle or shape of your stroke. Fill in more of your painting with this stroke.

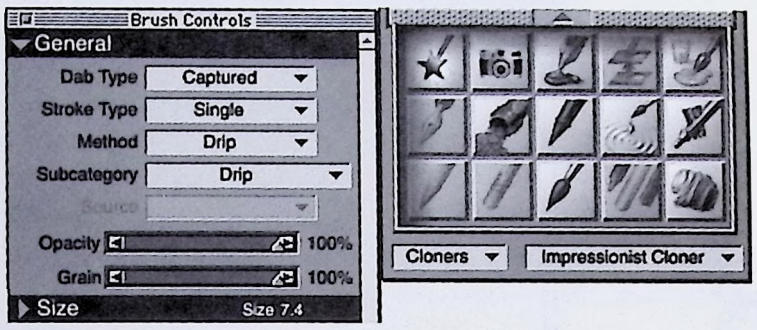
8. Finish this painting using played-back strokes.
9. Choose File>Revert. Leave the document open to continue in the next exercise.

Automatic Painting Effect

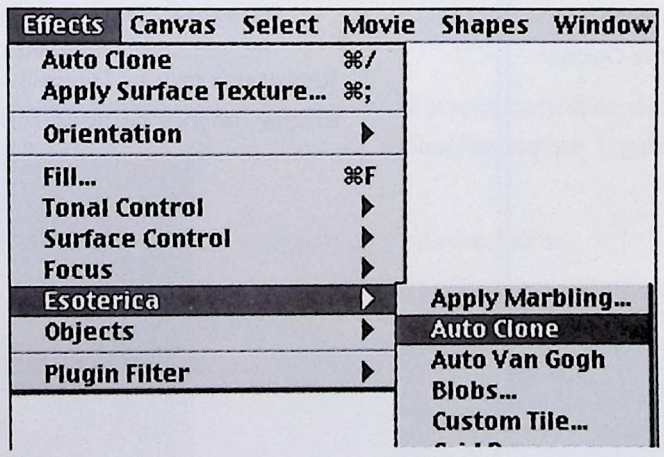
The quickest way to apply a painterly effect to a realistic image, such as a photograph, is to use the automated effects function called Auto Clone.

Auto Clone

1. Display your Tracing Paper.
2. Choose the following brush and set it up as shown below.



3. Under the Effects menu, choose Esoterica>Auto Clone. Painter will automatically lay down strokes in the impressionist manner.



4. Click anywhere in the image to stop the auto clone when the effect has been applied to your satisfaction. Your painting will be much too impressionistic. The strokes will be applied randomly, and it may be difficult to distinguish the subject from the background.

Since you have the original picture set as the clone source, you can use it as your fill source to bring back some of the picture's clarity. Simply select Fill from the Effects menu and choose Clone Source. The percentage slider controls the amount of image detail.

5. To solve this dilemma, make your brush size smaller so that the paint dabs are in proportion your subject matter.
6. Auto clone your painting until there is a thick layer of impressionist strokes.
7. Leave your image open for the final exercise with this technique.

Reintroducing Original Detail

You may be thinking that the previous feature is much too loose for practical application. The following steps will be used to reintroduce the original's detail in a selective manner.

Clone Back Original Detail

1. With the Cloner brush selected, choose the Soft Cloner variant.
2. In the Control palette, set the Opacity slider to a very low opacity and leave the Size and Grain sliders at their default settings.
3. Make a few strokes with this brush. The original image will appear with faint detail. Apply strokes where you wish to reintroduce detail.

4. When you have adjusted this painting to your satisfaction, save it as "Impressionist Arch.RIF" into your **Work in Progress** folder.

Additional options in the Sliders palette become available when Painter is used with a drawing tablet.

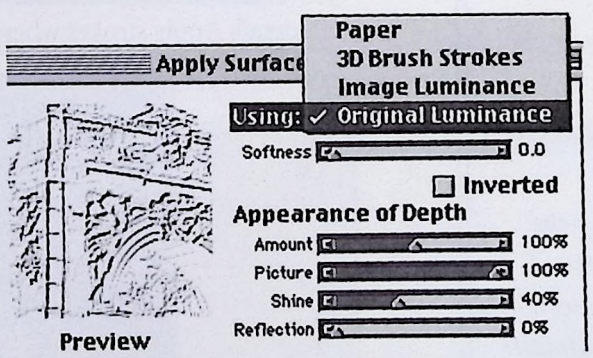
Use the shortcut for Auto Clone: Command/Control-Shift-Z.

Surface Controls and the Clone Source

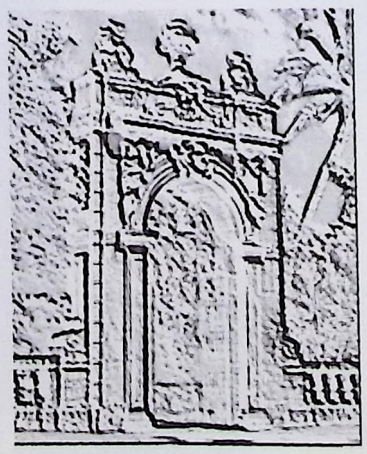
One of the advantages of setting up a clone is that several options in the Surface Control dialog box become available, expanding the painting possibilities of your image.

Use Surface Controls and Clones

1. If it is not open already, open the **Stone Archway.TIF** image from the **SF-Painter** folder.
2. Set up a clone by choosing Clone from the File menu.
3. Display your Tracing Paper.
4. Under the Effects menu, choose Surface Controls>Apply Surface Texture.
5. From the Using pop-out menu, choose Original Luminance. This will, in effect, find the edge contrast in the clone source and render an embossed effect based on these edges.



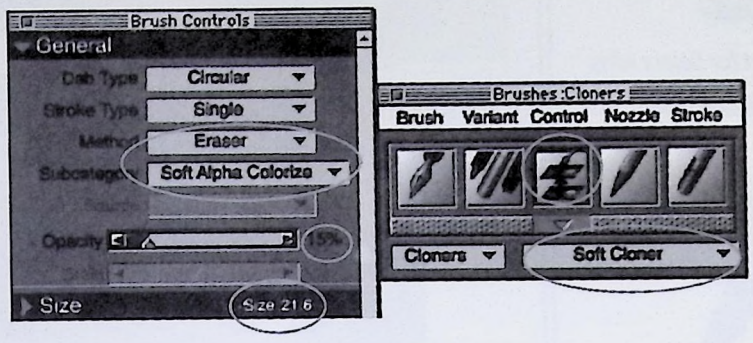
6. Adjust the Appearance of Depth and Light controls until you are pleased with the effect. Click OK.



When you paint back detail with the Soft Cloner, be careful to "puff" it back-in using single dabs. Don't drag or "scrub" your strokes. Low-opacity, single dabs applied sparingly work best.

You could now Fill with the clone source by choosing Fill from the Effects menu and selecting the Clone Source radio button. However, let's take a moment to apply a much more sophisticated effect.

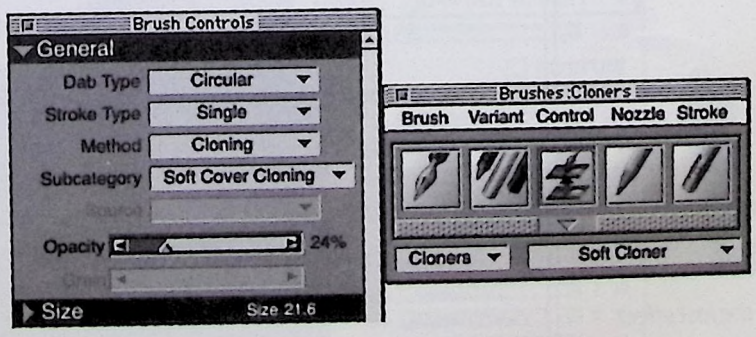
7. Set up your brush as shown below.



8. Erase areas of image detail — especially in the shrubbery to make it appear that the work is in progress.

Any brush can be used as a cloner. Simply select a brush and set up its method to cloning and enable the Clone Color check box in the Color palette.

9. Now return to the Soft cloner and set it up as shown below.



10. "Puff" in image detail on the arch and palm on the right.

The shortcut for Select All is Command/Control-A.

For the 3-D Brush Stroke technique, we paint with thick paint on the original and the stroke shows up on the clone when it is set up (in the Apply Surface Texture dialog) to show 3-D Brush Strokes!

To return to the last effect used, press Command/Control-(/).

To return to the effect prior to the last one used, press Command/Control-(;).

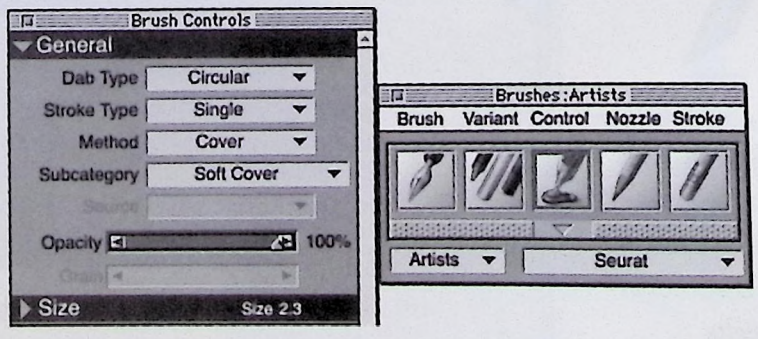
11. Before closing this painting, save it as "Edgy Arch.RIF" into your **Work in Progress** folder.

Regular Brushes and the Cloning Method

All of Painter's other brushes can be used in the cloning method for strokes not available as variants in the Cloner brushes. There is, however, another use for a clone and clone source: creating the illusion of thick paint with an Artists Brush and having the clone display the 3-D Effect. (Note: The brush can be set to "Cover" for this effect.)

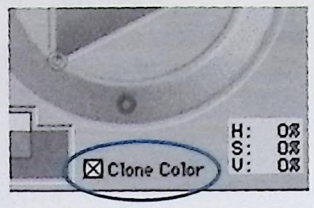
Clone with Regular Brushes and Using 3-D Brush Strokes

1. Make another clone of the **Stone Archway.TIF** file. Set it aside for now.
2. Make the original your active picture. (Very important!)
3. In the Brushes palette, choose Artists brushes and set it up as shown below.



In Step 4, be certain to check the Clone Color box on the Color palette.

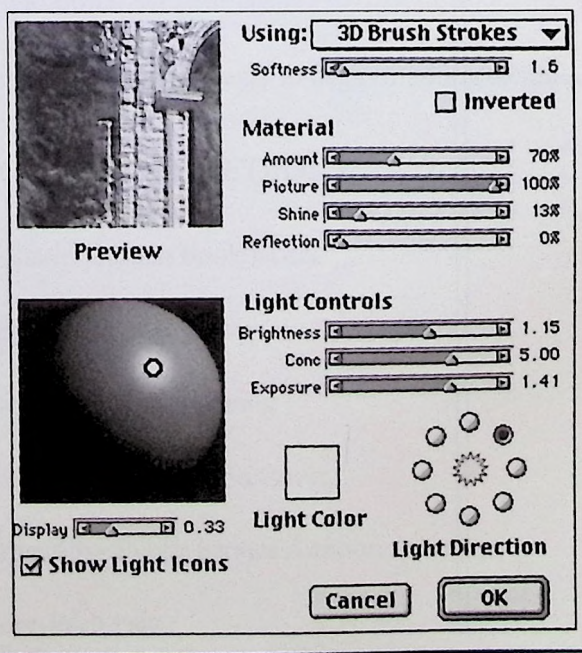
4. On the Color palette, check the small box labeled Clone Color.



5. Paint Seurat-like impressionistic dabs of sky and clouds. Because the source file is the same as the destination file, you see the little crosshairs indicating where the image information is being taken from.

6. Change the variant to Tubism. The default settings are acceptable to use.
7. Zoom in on the arch by clicking on the left pillar with the Magnifier tool.
8. Use this brush to paint texture on the arch. (Be certain Clone Color is checked in the Color palette.) Vary the size of the brush to create different textural interest.
9. Finally, switch to the Van Gogh variant. The default settings are acceptable to use. Stroke the foliage in short, curved strokes.
10. Make the clone file the active picture. (Very important!)
11. Choose Surface Control>Apply Surface Texture from the Effects menu.
12. In the Using pop-out menu, select 3-D Brush Strokes.
13. Adjust the Material and Light Source sliders to match those below and click OK.

Painter offers many levels of Undo/Redo. Use them to fine-tune your paintings.



14. Save and name the file "Artists Arch.RIF" into your **Work in Progress** folder. Close this copy and the original painting.

The completed "Artists Arch.RIFF."

Chapter 6

Layers

Chapter Objective:

To learn about what layers are and how they work, react to each other, and relate to the canvas. To provide practice manipulating layers and to demonstrate how the blend modes govern layer interaction. To explore the use of layers in creating composite imagery. To gain familiarity with the Image Portfolio. The Layers list and the Object palette will be discussed throughout this chapter. In Chapter 6, you will:

- Learn about the different types of layers: pixel-based, shape, reference layer, and the floating object and dynamic layer. You will become familiar with their icons.
- Become familiar with the Object palette and Layers list.
- Understand how to manipulate and order layers.
- Use techniques to create drop shadows.
- Work with the Composite modes available on the Control palette.
- Learn to transform layers.
- Use an additional dynamic layer.
- Lay the groundwork necessary to begin masking techniques.

Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

Layers

Layers are images, objects, or bits of images that float above the base canvas. These floating objects might be:

- pixel-based images
- drop shadows
- stand-in images known as reference layers
- vector-based shapes and type
- dynamic layers that are changeable (hence, dynamic) effects which manipulate underlying layers and the canvas
- floating objects — bits of layer-imagery which "hover" above the "parent" layer

These layers, however diverse in their functions and attributes, have several things in common. They all exist independently of each other and the canvas. They can be moved, edited, and changed as long as they remain floating. If they are saved in the RIFF format they will remain independent of each other and the canvas. Photoshop can open Painter files that contain layers if they are saved in the Photoshop format. Painter layers are opened as Photoshop layers. Many of Painter's composite modes can be translated exactly in Photoshop. Painter does, however, offer several composite modes which have no Photoshop equivalent. All layers follow the same rules in terms of layering, selecting, naming, hiding, and ordering in the layers list. They all may be cut, copied, pasted, and dragged onto the screen in the same fashion. They all obey the layer composite modes.

The keyboard shortcut to create a new file is Command/Control-N.

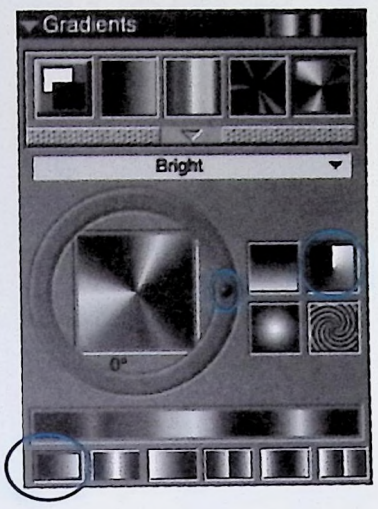
Preparing the canvas

In the exercises that follow, we will create layers and watch the layers list. We will work on a practice file and simply observe the way layers look and interact. Before we can begin, it is necessary to make a canvas for our explorations.

The keyboard shortcut to display the Objects palette is Command/Control-4.

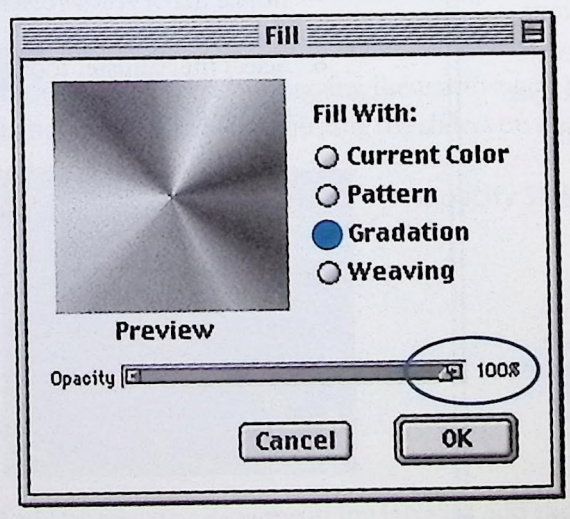
Use a Gradient as a Background

1. Make a new image file 300 × 300 pixels high, and at 72 ppi.
2. In the Art Materials palette, choose the Gradients "child" palette and select Bright. Set it up as shown below.



The keyboard shortcut to display the Art Materials palette is Command/Control-3.

3. Fill your blank image using this gradient by choosing Effects>Fill and selecting the button marked Gradation and clicking OK.



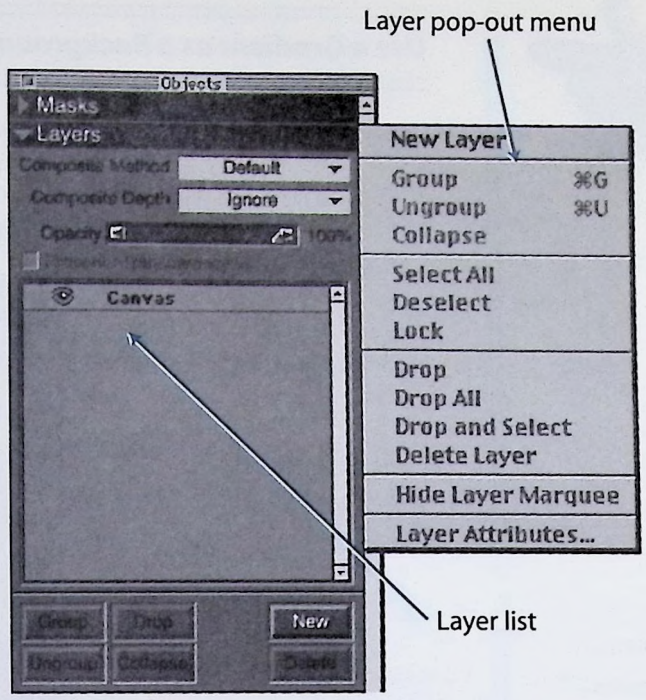
The keyboard shortcut for Fill is Command/Control-F.

4. Display your Objects palette and select the Layers section panel to access the Layers palette.

To float the selection, click within the selection area with the Adjuster tool. To float a copy, press the Option/Alt key while clicking with the Adjuster tool.

If the Layer bounding box (yellow and black) doesn't appear surrounding an active layer, enable it by choosing "Show Layer Marquee" from the Layer pop-out menu located at the upper right of the layer section on the Objects palette.

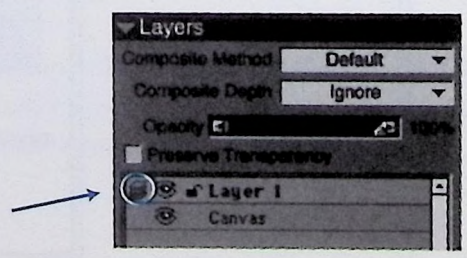
Be careful of what layer you are really painting on. It is easy to lose track of which layer is currently active. Keep your Objects palette on your screen for reference.



5. Select the entire canvas area (Command/Control-A) and choose Float from the Select menu. If you have no image area hiding under the scrollbars, you will notice that a yellow/black bounding box surrounds your new layer.

6. Select the Adjuster tool . You can move the layer around and see a blank canvas beneath it.

7. Examine the Layer section in the Objects palette. Notice the layer. We will call the area of this palette where the layers are listed the "layers list."



The small Layer icon indicates that the layer is a pixel-based layer.

8. Click beneath the layer in the blank area on the palette to deselect it. Any mark you make will appear on the canvas, not on the layer, as the canvas is active when no layers are active. Try painting with any brush on the canvas (set to the Cover method). Next, make the layer active by clicking on it. Paint a few strokes. The strokes affect only the layer and not the canvas.

9. Double-click on the layer (in the Layer List, not in the picture) to display the Layer Attributes box. You can name your layer and change the interaction of the

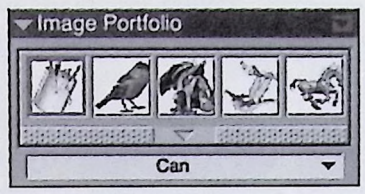
If no yellow and black bounding box appears around your Layers, you can turn it on by enabling the option in the Layers pop-out menu.

The keyboard shortcut to drop all selected layers is Command/Control-Shift-D.

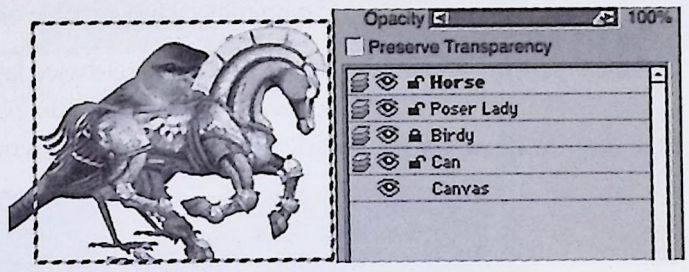
"Dropping" permanently embeds the layer into the base canvas.

layer with its visibility mask, numerically change its position above the canvas, and designate its use in a web page design here. Name this layer "Gradient" and click OK to exit the box.

10. On the Objects palette, open the Image Portfolio.

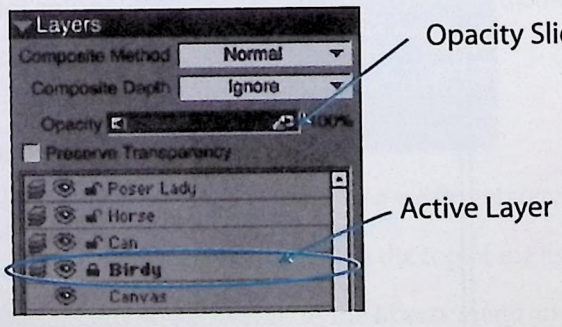


11. With the Adjuster tool, drag a few of these images over to your document. Drag over the Can, the Birdy, the Poser Lady and the Horse. The last image dragged appears at the top of the list. You can select a layer by clicking on it in the layer list.

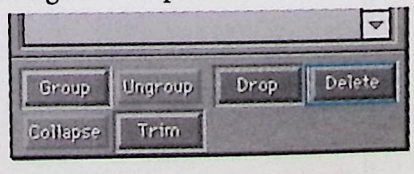


The fastest way to change the order of the layers is to select the one you wish to move and drag it up the list to appear in front, or drag it down the list to appear behind other layers.

12. Change the order of these layer by dragging them into a new position in the layers list. Change their opacity by adjusting the sliders on the Control palette.



13. Delete the Birdy by selecting its name in the layer list and clicking the Delete button at the bottom right of the palette.



14. Leave this file open for the next exercise.

Reference Layers and Layer Groups

When pixel-based images (such as image layers) are distorted, scaled, or skewed, the image integrity degrades. Painter addresses this issue by providing a reference layer, which stands in for the image layer during transformations. Committing the transformation applies the adjustment to the pixel-based layer. This reference layer saves the image's information from being lost through scaling and distortion.

Use Reference Layers and Composite Methods

1. In the layer list, select the Poser Lady layer. Drag her to the top of the list.
2. Choose the Effects Menu>Orientation>Free Transform. This changes the layer to a reference layer capable of undergoing many types of transformations.
3. Notice that the pixel-based layer icon has changed to a rectangular bounding box with handles along the perimeter and corners; these are the hot spots to click and drag to perform a transformation.

To constrain the proportion, hold the Shift key while scaling.

4. Drag up and out to resize the Poser Lady to approximately twice her original size.
5. Press the Command/Control key and place your cursor over the upper-right handle. Notice that the cursor turns into a tiny rotation tool. Rotate the Poser Lady layer until she lies diagonally across the canvas.

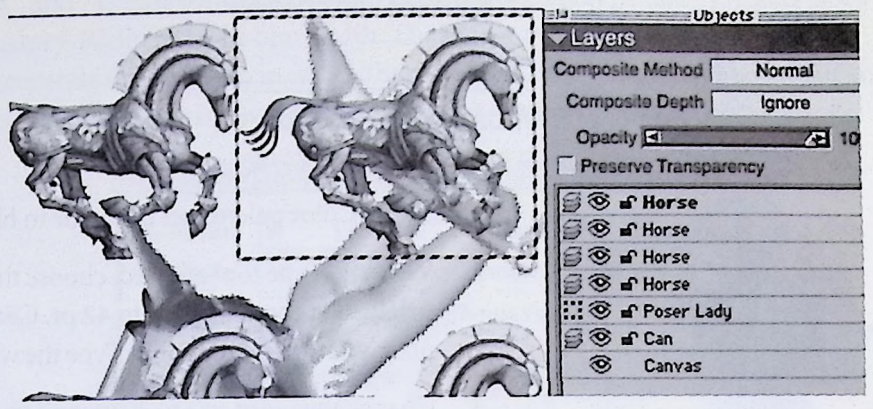
When you begin painting on a reference layer, Painter automatically converts to an image layer.

The order of layers is also an option on the Control palette. Click the front or back buttons to switch layer positions.

A layer can be made invisible by clicking its Eye icon on the layer list.

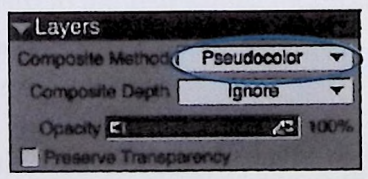
Many of the composite methods can be displayed the same in Photoshop. As a general rule, the first group listed, from Gel through Pseudocolor, will not translate exactly.

6. Select the Horse layer in the layer list. Drag it to the top of the list.
7. Next, select the active Horse layer in the picture and press Option/Alt-drag to create an additional horse layer. Do this three times and place each in a corner of the image. Your picture and layer list should look like the one shown below.



8. Shift-click to select all the Horses in the layer list.
9. Create a group by clicking the Group button on the bottom of the palette.

10. Click the Collapse button to merge the four separate layers into one.
11. Now that the Horses are collapsed into one layer, we can apply a composite method to them simultaneously. In the Composite Method pop-out on the Layers palette, choose Pseudocolor.

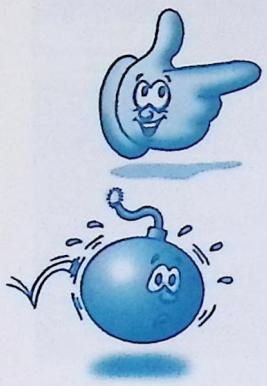


Feel free at this time to experiment with all the different composite methods.

12. Select the Poser Lady layer and bring it to the top of the list.
13. With the Poser Lady still active, go to the Effects menu and choose Orientation>Commit Transform to turn the reference layer back into a pixel-based layer.
14. Drag the Can layer to the top of the layer list.
15. Place it at the top center of the picture. Change its Composite Method to Multiply.
16. Save this picture as "Scare in the Air.RIF" into your **Work in Progress** folder before continuing.

Layers and Drop Shadows

One simple way to add depth and dimension to artwork is to separate the text from the imagery with a drop shadow. Painter generates drop shadows and creates a group consisting of the object and the shadow. These groups can remain linked or can be collapsed into one layer.



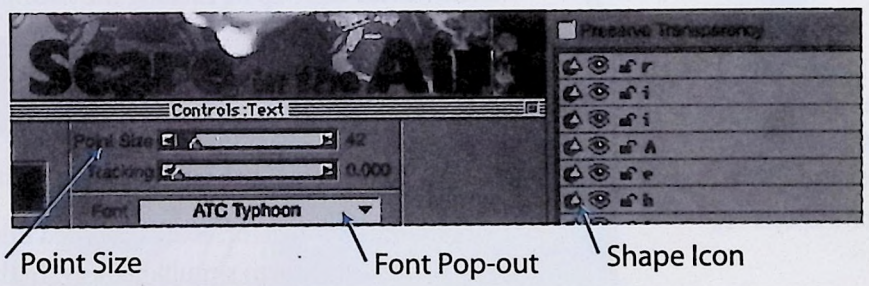
Groups will move "linked" only if they are closed. (Click the little triangle "push-bar" in the layer list next to the group's name.)

Hint for Step 5: Alternately, with the Canvas as the active Layer, select the Adjuster tool and drag a selection marquee over the type to select all of the characters.

Hint for Step 7: Note that the type is now a pixel-based layer and no longer a vector-shape.

Make Drop Shadows

1. In the Color palette, set the color to black.
2. With the Type tool selected, choose the font ATC Typhoon from the Control palette. Set the point size to 42 pt. Click at the bottom left within the image to place your Insertion point. Type the word "Scare".
3. Change the point size to 20 pt. and type "in the".
4. Set the point size back to 42 pt. and type the word "Air".



Notice that the type is a shape layer.

5. With the Adjuster Tool, select all the type by shift-clicking the names of each layer in the layer list on the Objects palette. Note the many transformation handles. (If the Show Layer Marquee option in enabled, you will also see one around each letter.)
6. Click the Group button, then click the Collapse button to reduce the group to one pixel-based layer.

7. You will be prompted to commit this layer. Click the Commit button when asked.
8. Before adding a drop shadow, double-click on this newly formed layer to access its Layer Attributes dialog box. Rename it "Scare…" and click OK.
9. Save your work and leave it open so we can make a Drop shadow.

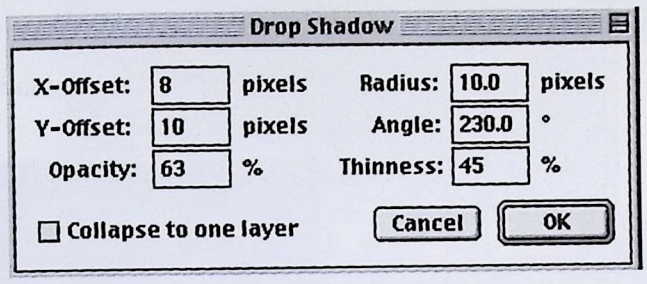
If you wish to change the type color, choose the Set Default Shape Attributes menu item in the Shapes menu. Double-click the "Fill" box to access the Color Picker.

Multiple layers may be selected by dragging a selection marquee around them in the picture with the Adjuster tool. (Just be certain that the Canvas is the active Layer, or this trick won't work.) Alternately, use the Group command in the Layer pop-out menu located in the upper-right of the Layer section on the Objects palette.

Drop Shadows

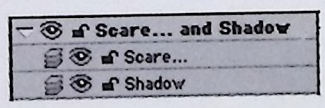
Painter handles the creation of drop shadows through a simple dialog box: no repetitive masking and layer manipulation involved.

The "X" and "Y" axis controls the offset from the center of the layer. Opacity is self-explanatory. Radius sets the blur width. The higher the number, the blurrier it is. Angle controls the direction in which the shadow is cast. Thinness smooths out any streaks that may occur in the shadow. Raising this number will soften the streaks.



Use Drop Shadows

1. With the Scare layer still selected, choose Effects>Objects>Create Drop Shadow.
2. The Drop Shadow dialog box prompts you to make choices concerning the angle and attributes of the shadow to be created. Our choice is displayed in the illustration above.
3. When a drop shadow is created, it forms a group with its parent layer. Click the arrow in the layer list next to the item named "Scare and Shadow" to view the items in the group.



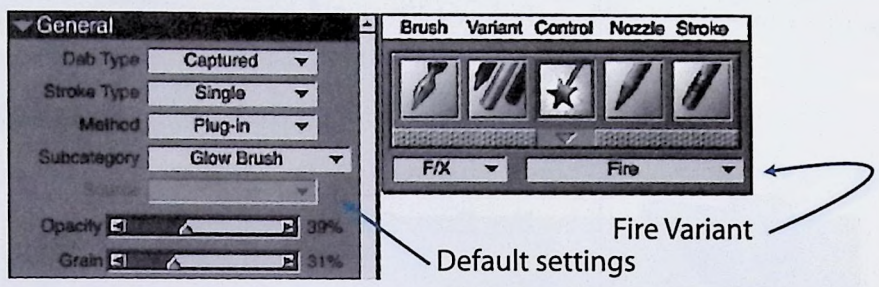
4. The closed group can be moved around the image with the Layer Adjuster tool. Select a position for the type. We nudged our group up and over slightly to align it perfectly. Save your document.

FX Brushes and Painting on Layers

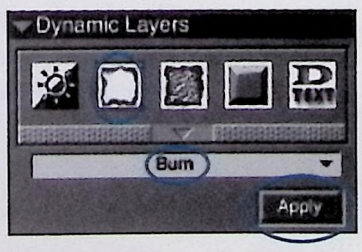
There is a vast array of brushes that apply effects rather than color. These are called F/X Brushes and are well worth exploring. These brushes work similar to other brushes. We will use them in this exercise to gain some control in painting on Layers.

Paint on Layers: F/X Brushes and Dynamic Layers

1. To add flames to the Poser Lady layer, select it in the layer list.
2. Set up the F/X brush as shown below. Make certain that the brush is selected in the Tool palette.



3. Begin to paint flames on the hand. Notice that only the active Layer gets singed. Layers are designed to be independent of each other and the canvas.
4. To apply flames to all the layers at once, they must first be dropped onto the canvas. Choose the Drop All command from the Layer pop-out menu.
5. Finish adding flames to the picture. The more you paint, the brighter the flames will be.
6. To add a burnt edge to your image, choose Select>All, then Select>Float.
7. Choose the Dynamic Layers from the Objects palette. Select the Burn icon and click the Apply button.



To "float" a selection, click inside its border with the Adjuster tool.

When you paste, images automatically come in as layers.

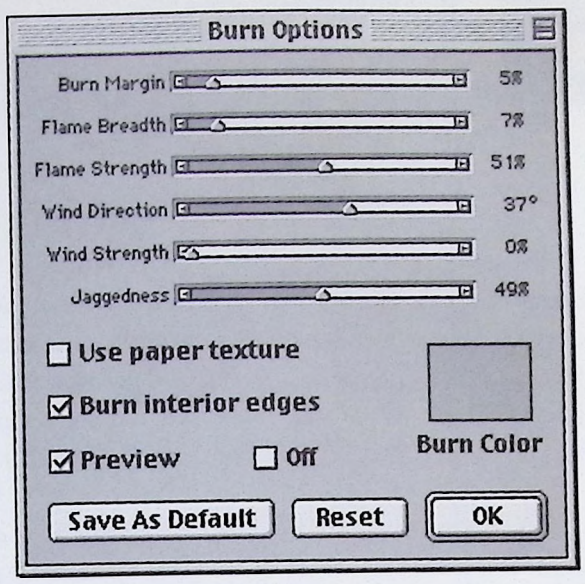
Experiment with shortcuts. Command/Control-Z will undo the previous steps.

Clicking on the Burn Color box sends you to the Color Picker.

Layers can be moved in one-pixel increments by using the Arrow keys.

A layer can be dropped by selecting it and choosing Drop from the Layer menu, or by pressing the Drop button located toward the bottom right of the layer list.

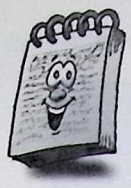
8. In the Burn Options dialog box, set the burn parameters as shown below.



9. When finished setting the sliders, click OK.

10. Save your work and close the document.

The finished illustration.



Notes:

Chapter 7

Pixel-Based Masking

Chapter Objective:

To develop an understanding of masks generated with pixel-based selection tools. To strengthen and diversify basic selection techniques using these tools. To begin to use the sophisticated levels of control over selection areas provided by masking. To learn how masks figure in the development of complex digital imagery. In Chapter 7, you will:

- Develop a working knowledge of the Mask palette and how it functions.
- Learn how to make, save, and load previously created masks.
- Gain an understanding of how to male masks based on color and how to use the Magic Wand tool to create selections.
- Strengthen your skills to create selections with the rectangular and oval selection tools and learn how to save these selections as masks.
- Learn to use masking brushes and become proficient at generating and editing new masks.
- Become familiar with the Drawing modes.
- Learn to use masks to protect specific image areas during editing.
- Work with Layer masks to create sophisticated collage techniques.

Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

Pixel-Based Masking

Masking in image-editing programs has the reputation of being an advanced skill best left to power users. This is simply not true. Masking actually enables the artist to replicate traditional resist techniques. Masks offer the ability to use sophisticated composite and layering techniques. Masked objects are infinitely editable. The trick to using masks successfully is to understand how they mirror traditional media.

A layer's visibility is defined by its mask.

In a traditional airbrushing environment, the artist wants to protect an area from overspray. That area is protected by covering it with tape, which is also called a "frisket" or "resist." (Frisket is like rubber cement and is brushed over the area to be protected.) When the new paint is dry, the tape or frisket is removed. The same principle applies to masks. In this situation, the tape or frisket is the mask.

A user mask (or pixel-based mask) is an 8-bit (black-and-white) frisket designed primarily to isolate and save selected areas. There are several advantages to using masks rather than simple selections.

- Masking styles a level of sophistication and provides professional results that makes selections look made with the Lasso or with marquees as if they were created by beginners.
- Masking is far less clumsy than drawing complicated selection outlines.

Any Photoshop alpha channel will import into Painter as a mask.

Some Important Things to Know about Masks:

- A mask can be created from a selection based on color information. It is easy to select a red balloon floating against a blue sky, for instance.
- Masks can be generated based upon selections created with the Rectangular and Oval Selection tools, as well as with the Lasso tool.
- Masks created with these tools can be further refined using either selection tools or masking brushes.
- The Auto Mask feature allows for masks based on paper, 3-D brushstrokes, original or image luminance, or the current color.
- Masks can be inverted, added to, subtracted from, or intersected with existing masks.
- Masks can be stored and reloaded. Painter can remember 32 user masks.
- Layers have built-in masks which can be edited.
- Effects and Fills can be applied to masks.
- Mask attributes can be changed depending upon image requirements.

When you "Save As...", remember to change the format to RIFF, which supports both layers and masks. TIFF format supports alpha channels (or masks). Use this format whenever you have masks, but not layers.

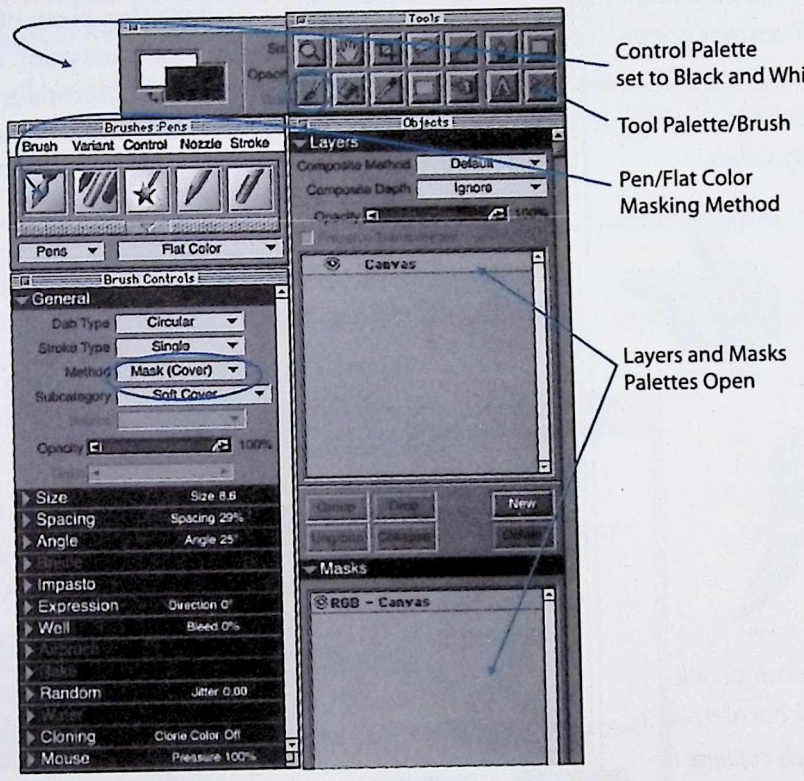
The keyboard shortcut for the Objects palette is Command/Control-3.

To temporarily access the Grabber tool while in another tool, press the Spacebar.

Setting up the Interface for Streamlined Working

1. Open the image **Beach Beauty.TIF** from the **SF-Painter** folder. Save the file as "Beach Beauty.RIF" into your **Work in Progress** folder.

2. It is critical to set up the work environment for easy access. First, set up your Control palette and main Tools palette to overlap as shown below. Place them at the top right of the screen. Next, open both the Layers and Masks palette on the Objects palette. Place the Objects palette beneath the Tools palette.

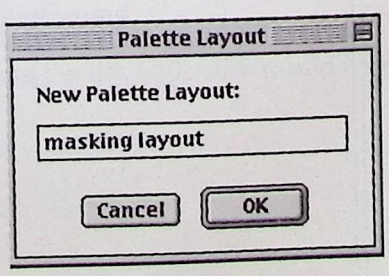


3. Next to the Objects palette, place the Brushes and Brush Control palette. Set up your brush as shown below. Be certain that the method is set to Masking. Your palettes should look like the arrangement above.

4. Be certain that your colors are set to black and white.

5. Save this palette configuration for later use. Choose Window>Arrange Palettes>Save Layout.

6. Name this palette arrangement "masking layout," and click OK.

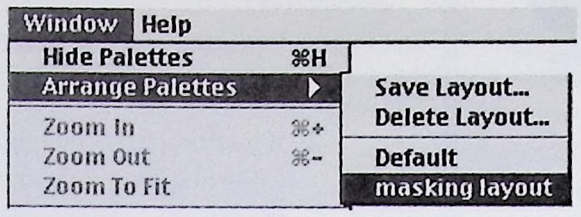


There is no need to leave the Color palette open if you are masking with 100% black or 100% white. Colors are available from the Control palette (which is smaller and also holds brush size and opacity sliders.)

On a Macintosh, double-click the title bar of a palette to completely collapse it.

Think of selections as a cardboard stencil. Modification can only occur within the isolated area.

7. This configuration will be stored in Painter and is available whenever you need it. Access it by selecting Window>Arrange Palette. Keep the document open.



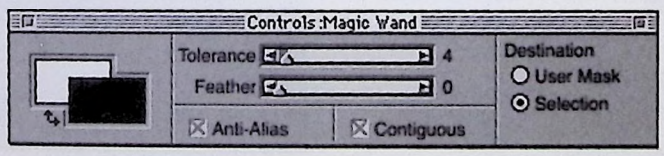
Masking Based on Pixel Values

The magic wand is used to select pixels of similar pixel descriptions — we perceive this as choosing pixels of the same color. Because we often need to select a large area of like colors (the sky, for instance, or a green-screen background), the wand is the perfect tool for the job. Masks can be generated easily based on pixels selected with this tool.

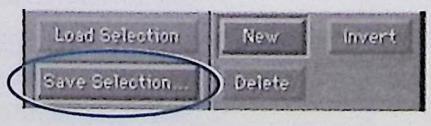
Make Selections and User Masks Based on Color

1. With the Magic Wand tool, click on the white area outside the oval picture. Notice that all the white pixels touching each other (contiguous) are surrounded by a selection border.

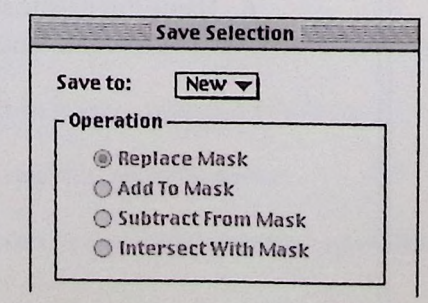
2. Examine the Control palette for the Magic Wand tool. The default tolerance is set to 4. Because the default feather is 0 (zero) it will be a hard-edge selection. The destination may be either a selection or a User mask.



3. Change the selection into a mask by clicking the Save Selection button on the bottom of the Mask palette, or by choosing Save Selection from the Select menu.



4. You are prompted to Save to a New selection. Click OK.



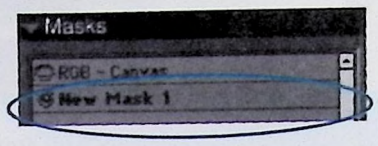
The higher the tolerance. the more pixels are included in the selection. Remember: "zero-tolerance"—very little is acceptable.

Selections can be changed into masks, and vice versa. There is no need to make a definitive choice when you start.

The keyboard shortcut for Deselect is Command/ Control-D.

The Shift key adds to a selection. Remember that the Shift key "adds to" a lower case letter by capitalizing it.

5. The new mask appears in the mask list. The Eye icon is closed, indicating the invisibility of the mask at this time. Notice the RGB canvas is the active element.



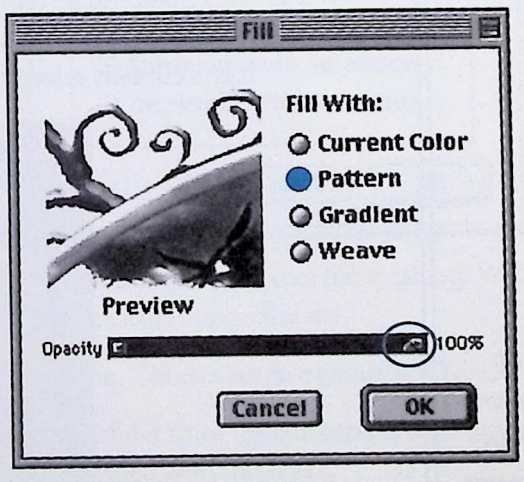
6. From the Select menu, choose None.

   This loses your selection. If it was a complex selection, a lot of time would have been wasted. However, you can reload the selection area because it was safely stored in the mask list.

7. Load New Mask 1 by clicking the Load button at the bottom of the mask list. You are prompted to load New Mask 1. (Leave the default "Replaces Selection" option enabled.) Click OK. The selected area will reappear.

8. From the Pattern category of the Art Materials palette, choose Filagree, then close the palette.

9. Choose Fill from the Effects menu. Select the Pattern Option at 100% Opacity. Click OK.



Notice that the pattern fills only the area surrounded by the selection marquee.

10. Set the tolerance for the Magic Wand tool to 10 in the Control palette. This setting will be much more tolerant of the slight differences found in pixel descriptors.

11. Uncheck the contiguous box in the Control palette. This will enable the wand to select areas that are not touching.

12. Select a clear blue area of the sky. Shift-click to add most of the blue sky to the selection.

The keyboard shortcut for Fill is Command/Control-F.

13. In the Control palette, click the Destination button next to User Mask.

The selected area gets a coat of "masking." The opaque red paint is the default mask color. (Here it is shown as a blue tint. On your screen, it will be a red tint.) Masking clearly defines the selected area. This User mask appears in the mask list as a "Magic Wand mask."

14. Save your work so far. Keep the document open.

Masking Techniques

A common technique for sophisticated mask-making is to start a mask with the wand and then fine-tune it using brushes.

Refine the Mask with Brushes

1. This mask can be refined by painting on it with a brush using the masking method. Black applies masking. White removes the masking. Mask the sky until it is accurately selected.

The Pen tool (in the Brush palette) is a perfect masking tool due to its non-textured stroke. Masking paint seems to flow smoothly from the Pen tool.

Mask with different opacities to vary the translucency of the selected area.

Magnified image for precise masking. Notice the clean mask next to her hair.

2. When finished masking the sky, save your work. Keep the document open for the next exercise.

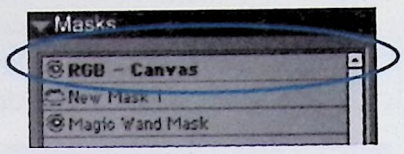
Mask visibility, color, and opacity can be changed by accessing the Mask Attributes dialog box from the Mask pull-down menu. The default mask color is red. Change it, as we have, to any color that you prefer.

Always be certain you are painting on the correct Mask. It is easy to be on the wrong layer or mask.

The Maximum slider controls the intensity of color. The Minimum slider is operable with the other "Using" choices.

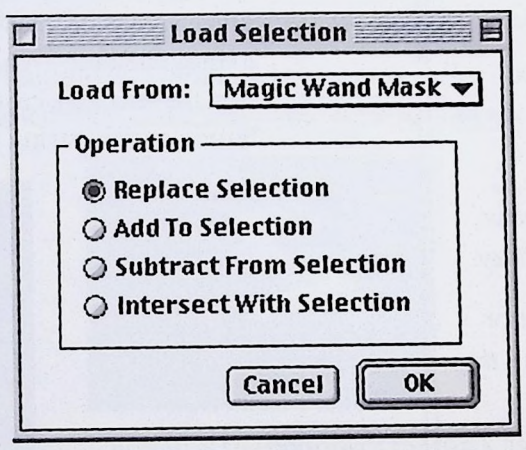
Load Masks and Applying Effects

1. In the mask list, activate the RGB canvas.



2. If the Magic Wand mask's visibility is on (the Eye icon is open next to its name in the mask list), be certain to turn it off. (Click its Eye icon shut.) Then, click the Load Selection button on the bottom of the Mask palette.

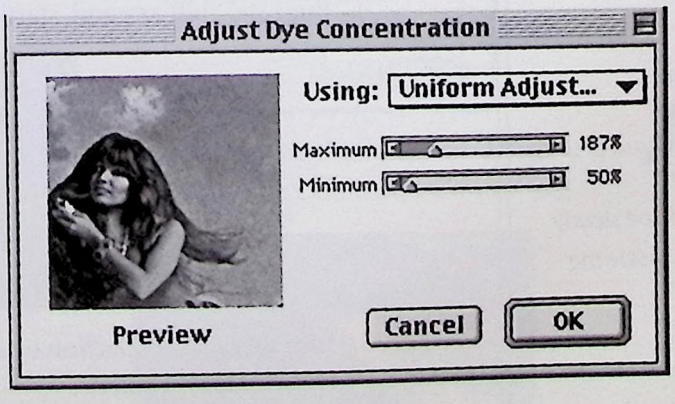
3. In the Load Selection dialog box, set Load From to the Magic Wand Mask. Be certain that the Replace Selection button is selected and click OK.



4. An animated selection marquee replaces the masking. While it is selected, let's darken and add some saturation to the sky.

5. From the Effects Menu, Choose Surface Control>Dye Concentration.

6. Move the Maximum slider until the sky becomes moody and dramatic. Click OK when you are satisfied with the effect.



7. Select None and save your work.

Freeform Selections and User Masks

Oval and rectangular selections are not always the best choice for isolating areas as very few natural objects are regularly shaped. The Lasso tool is a better choice for this procedure. It is difficult to select an object in one fell swoop, so there are two techniques designed to deal with this problem. With any selection tool, use the Command/Control key to Subtract-from a selection, or use the Shift key with any selection tool to Add-to selections.

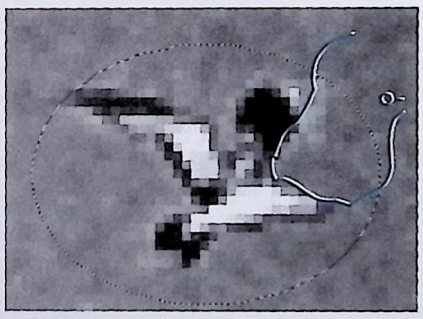
Refining Selections

The keyboard shortcut for the Magnifier is the "M" key.

The keyboard shortcut for the Oval Selection tool is the "O" key.

The keyboard shortcut for the Lasso tool is the "L" key.

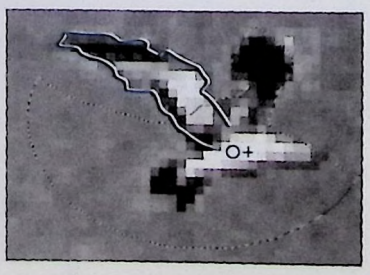
1. With the Magnifier, drag a marquee around a gull. Switch to the Oval Selection tool and drag a marquee around it.
2. With the Lasso tool selected, press the Command/Control key and begin drawing outside the oval selection. Cross over the marquee area and trace next to the gull's body. When your hand gets shaky or cramped, and you feel you will ruin the selection, cross the marquee area again. When you release the mouse button or your stylus, the selection will close.



The minus sign is to remind you that you are subtracting from the selection.

3. Remove another small piece of sky from around the gull. Next, remove his whole left wing.
4. Press the Shift key and, starting inside the gull, trace the removed wing.

You only have to be steady and neat while inside the selection area.



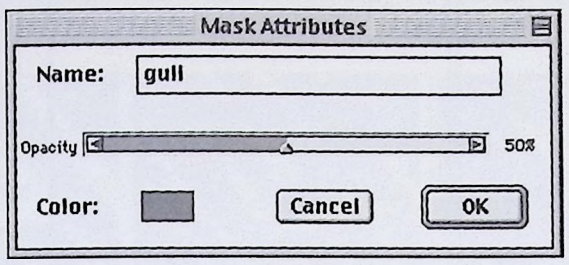
5. Save this partial selection by clicking the Save Selection button on the bottom of the mask list palette.
6. You will be prompted in the Save Selection dialog box to save as a New mask. Click OK.

When the Lasso tool and Shift key are pressed, a plus sign (+) will appear to remind you that you are Adding to a selection.

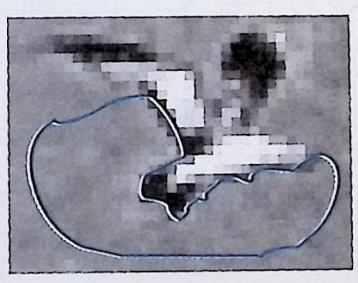
Habitually store and load custom layouts, palettes, and brushes to save valuable time and to eliminate screen clutter.

Don't hesitate to change the mask color if red (the default) is not the best choice for your subject. Also, the mask opacity works best at about 75%. (Mask imperfections are more readily visible and the mask is still translucent.) These controls are located in the Mask Attributes dialog box.

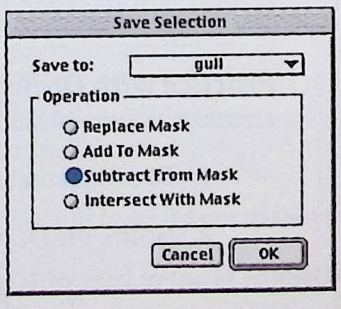
7. The New Mask appears in the mask list. Double-click on its name (do not click on the eye).
8. The Mask Attributes dialog box appears. Rename this mask "gull". You can also change the opacity and color of the mask if you wish. Click OK.



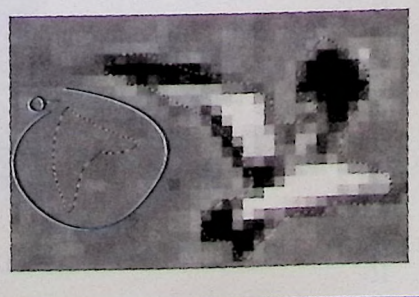
9. Double-click on the first mask created (New Mask 1) and rename it "Border Mask". Select the RGB canvas in the mask list.
10. Choose None from the Select menu to turn off any selection marquee.
11. With the Lasso tool and the Command/Control key, drag a selection from the underside of the left wing to the beak. The selection does not have to be exact.



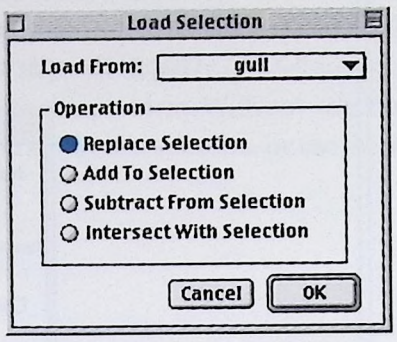
12. Click the Save Selection button at the bottom of the mask list. In the Save Selection dialog box, choose gull. Select the Subtract from Mask option.



13. The selected areas in the sky can be eliminated by dragging around them with the Lasso while holding down the Command/Control key.



14. Once the gull is perfectly selected, click the Save Selection button and replace the Gull mask. Save your document.



Always save selections that take more than a second to create. Get in the habit now.

Drawing Modes

Painter has two features that allow the artist to easily switch between the selected area and its inverse. These features allow for a quick reversal of the active area. This feature is a pop-out icon located in the lower-left corner of the document window. (See Step 2 below for an illustration.)

The first of these features we will examine is "Masked Outside," the fly-out on the far right which is similar to a cardboard stencil protecting the subject. This mode is used primarily when the artist wishes to confine brushstrokes to the selected area and protect the background from stray marks.

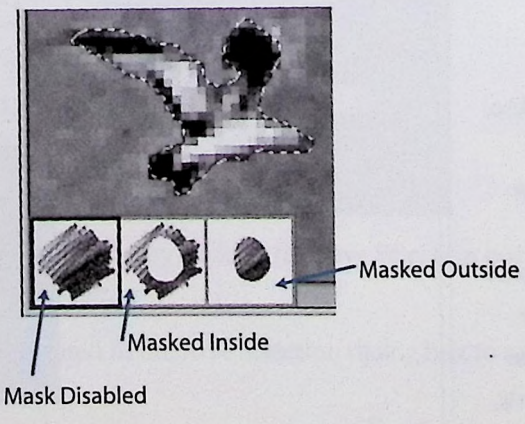
The second mode (middle icon) is "Masked Inside." This allows the artist to make marks anywhere on the canvas except within the selected area.

The last mode, called "Mask Disabled" (the far left icon), allows you to draw anywhere on the canvas.

Practice with Drawing Modes

1. Be certain that the RGB canvas is active. Load the gull selection.
2. Notice the Drawing mode fly-out located at the bottom left of your image file.

Be certain which mask is active, or if the RGB canvas is active. Closing the Eye icon on an active mask only renders it invisible. It is still active. Click on the name of the mask on the RGB canvas to activate it.

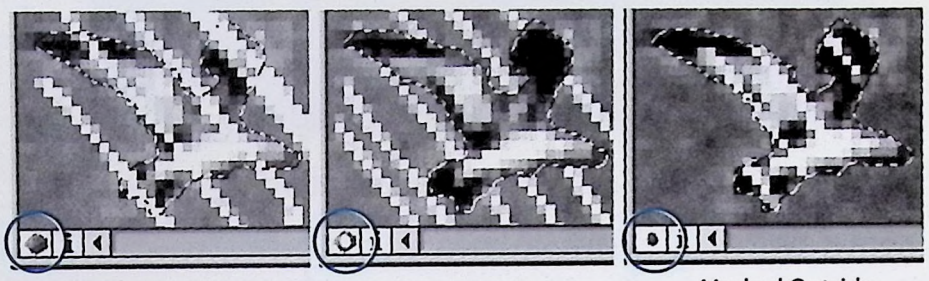


In Photoshop, painting can only occur within selection "ants". In Painter, the Drawing Mode governs what gets painted on — not the "marching ants."

The drawing modes are not to be confused with the Invert Mask command. Drawing modes are to facilitate painting. The Invert Mask command governs masked areas and where effects can be applied.

Use the drawing modes to help you "speed color" within a defined area. You can color with reckless abandon and the strokes are confined to "Masked Inside," or "Masked Outside."

3. Activate the Masked Inside mode.
4. Using the chalk, make strokes over the gull and the sky. Notice they only affect the sky.
5. Change the Mode to Masked Outside. Now only the gull is affected. Finally, switch to the Mask Disabled Mode. There is no constraint.



Mask Disabled | Masked Inside | Masked Outside

6. Select File>Revert to start fresh for the next part of this exercise.

New Masks and Layers and Their Visibility Masks

In the next exercises we will examine two of Painter's most versatile and useful features: how to create new masks and layers, and then how to modify their visibility masks.

Many traditional artists who use Painter bypass the selection tools and begin painting straightaway on a new, blank mask. The following exercise will address this technique after first demonstrating layers and their visibility masks.

Every layer comes with its own visibility mask. This mask is created whenever a selection is turned into a layer. This happens automatically when a selection is cut and pasted into a new document, or floated, or dragged over with the Adjuster tool. The mask defines the visible area, and it is entirely editable.

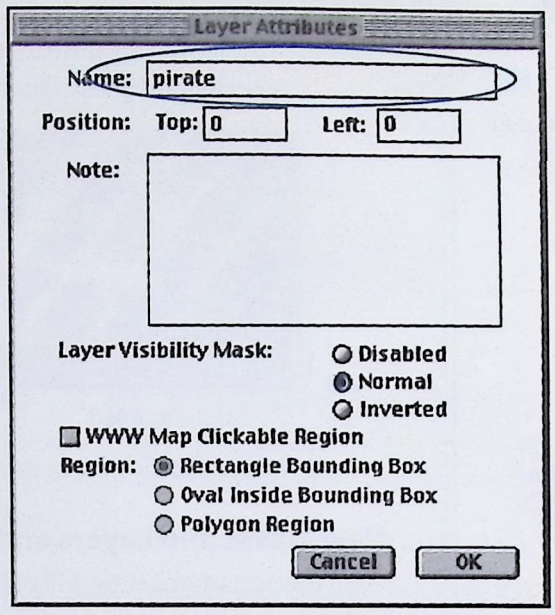
Layers and their Visibility Masks

Make sure that both the mask list and layer list are displayed on the screen.

1. Open the image **Pirate.TIF** located in the **SF-Painter** folder.
2. Immediately Save a copy of the file into your **Work in Progress** folder and name it "Pirate.RIF". Be certain to change the image format to RIFF.
3. Select All and drag the pirate image over to the Beach Beauty picture using the Adjuster tool. It will lie above all the others in the mask list, and will be the only entry in the layer list.
4. Double-click its name to access the Layer Attributes dialog box. Rename the layer "pirate".

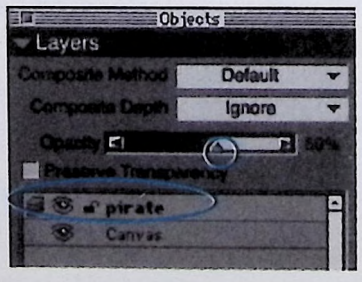
If your masking strokes do not seem to have any effect and the correct layer's mask is active, make sure that the Layer Visibility Mask is set to "Normal."

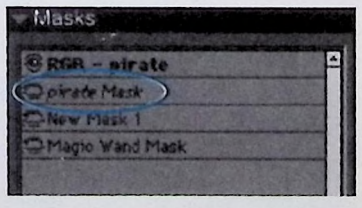
5. Be certain that the configuration of the options follow the settings as shown below. These controls govern the visibility and interaction of the layer's mask with the underlying layers.



6. Drag the Opacity slider on the Control palette until the Pirate is translucent. (It should look like a dreamy memory of the mermaid's true love.) This is a nice, but not a very sophisticated, composite technique.
7. Drag the pirate over to the sky area to the right of the mermaid. Change his translucency if you wish.
8. Make the pirate's mask the active mask by clicking on it. The Layers and Masks palettes should reflect the following setup.

To view the mask as a black-and-white image, toggle the RGB canvas Eye icon off. It is helpful to see the mask as a solid shape to be certain it covers the area completely.





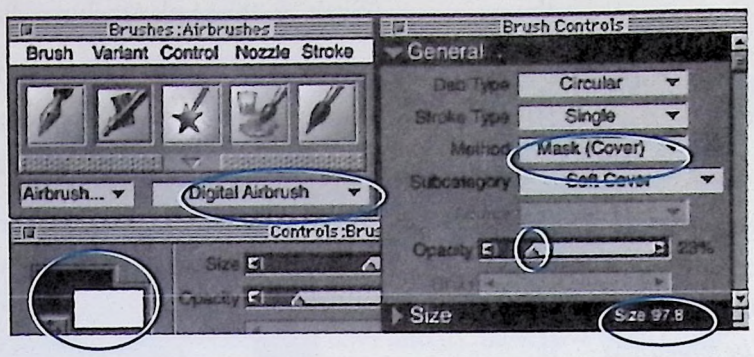
9. Choose the Brush in the main Toolbox. In the Control palette, make white the forward color.
10. Select the Airbrush, the Digital Airbrush Variant, and select the Masking method. Use "Puff" strokes to lightly remove sheer areas of the pirate's cloudy background.

To invert a selection, choose Invert from the Select menu.

The mask list only shows masks related to what is currently active. That is why, when the Canvas is active, any masks created based on its information will be available in the mask list. In order for a Layer's mask to be visible, the Layer must be active in the layer list.

Although masking (painting with black) works with the brush in any Method, unmasking (white) will only work in Mask Method.

The Brush setup should look like the following example.

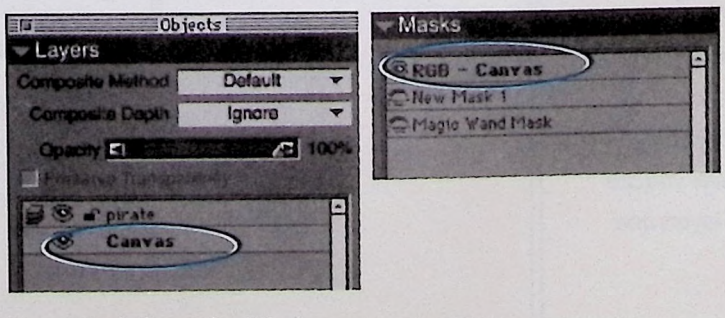


If you remove too much, switch to Black and repaint the imagery.

11. When you are satisfied, save your work. The completed illustration is shown below.

Create New Masks

1. At this point, the Pirate mask and Pirate layer are both active. In the layer list, close the Eye icon on the Pirate layer to make him invisible.
2. Select the RGB Canvas as the active layer in both the Layers and the Masks palettes. (The Pirate is invisible, and inactive now. The Pirate's mask will disappear from the mask list.)



3. Select New Mask from the Masks pop-out menu.

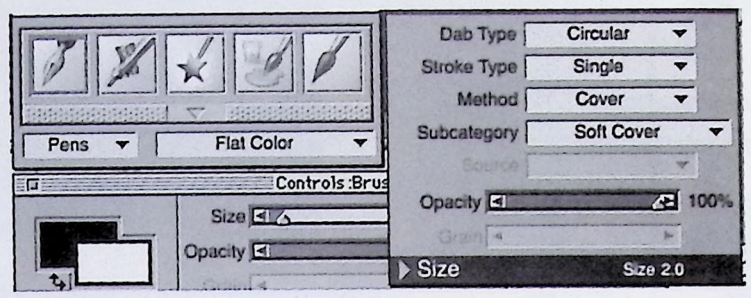
Being able to see the underlying canvas is essential to creating a good mask. Don't be misled into thinking that because you can see it, it is the active layer.

Clicking inside a selected object with the Adjuster tool leaves a hole in the canvas beneath the floating object. To float a copy, click while pressing the Option/Alt key.

It is very important that you have both the mask and layer lists visible on the screen whenever you are working with layers and their masks.

4. A new mask will appear in the mask list. Double-click on it and rename it "Birds" in the Mask Attributes dialog box.

5. Choose the Pen and set it up as indicated below.



6. Be certain that black and white are still the selected colors in the Control palette.

7. Mask the gulls. Zoom in to help create clean masks. Use black to mask; use white to unmask unwanted coverage.

8. When you're satisfied with the masking, toggle off the Eye icon on the Birds mask. Make the RGB canvas active. (This is very important.)

9. Click the Load Selection button at the bottom of the mask list palette.

10. Select the Birds mask and check the Replace Selection option in the Load Selection dialog box. Click OK.

The Arrow keys are helpful for moving layers in small increments.

Masking with white allows the underlying canvas to show through. Black makes the layer image opaque.

The keyboard shortcut to hide the black and yellow Layer Marquee is Command/Control-Shift-H.

It is good practice to close the Eye icon of the mask being altered. The effect produced is not compromised by a different mask color. Remember to vary the opacity and size of your strokes.

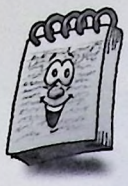
11. The birds will now be surrounded by selection marquees.

12. Float a copy by clicking one of the birds with the Adjuster tool while pressing the Option/Alt key. (Notice that a layer and its mask have been created in both the layer and mask lists.)

13. Move them with the Arrow keys to offset them from the original birds. Zoom out to get a better perspective on the placement of these additional birds.

14. Click on the visibility of the Pirate layer to get the complete effect of all your hard work.

15. Save and close the document.



Notes:

Review 1

Chapters 1 Through 7:

In Chapters 1 through 7, we learned the working environment of Painter, and how to work efficiently with the many tools available to create the effects that your illustrations require. Through this series of discussions, extensive hands-on activities, and exercises, you should:

- Know how to use the Brush palette, and be familiar with it variations. You should be familiar with the Painter workspace, and know how to control the dimensions of your canvas. You should also know how to navigate and customize within the Painter interface.
- Understand the function of the Painter tools, and how to access their features. You should know how palettes are configured. You should have an understanding of libraries, and know how to maximize your workspace by efficiently arranging palettes and windows.
- Know how to use the Brush palette, and understand the variations that can be applied to a basic brush. You should know how to select and paint with many of the brushes. You should now be comfortable with using the basic tools.
- Understand how to incorporate paper textures into your illustration, and how to create surface texture in pictures. You should also know how to create 3-D type and original paper textures, and understand how to use the lighting controls to enhance your artwork.
- Understand the use of the clone source as a basis for freehand painting, or as a global effect applied to your artwork. You should know how to utilize the Tracing Paper feature with a clone, be familiar with the Cloners brush and Auto Clone, and know how to record and playback strokes. You should also understand the clone relationship, and how to use this knowledge in the creation of artwork.
- Be familiar with the different types of layers, and how to recognize their icons. You should be familiar with the Object palette and Layer list, understand how to manipulate and order layers, how to use techniques to create drop shadows, how to transform layers, use an additional Dynamic Layer, and have the necessary knowledge to begin masking techniques.
- Understand masks generated with pixel-based selection tools, and know how to strengthen and diversify basic selection techniques with these tools.

Chapter 8

Mosaics and Tessellations

Chapter Objective:

To learn about creating mosaics and tessellations based on source imagery or as freehand painting with tiles. To learn more about creating artwork based on vector information and how vector-based art differs from bitmapped imagery. To discover the similarities between Painter's Mosaic feature and traditional mosaics. In Chapter 8, you will:

- Gain an understanding of traditional mosaics and tessellations.
- Learn about the similarities and differences between Painter's mosaic and tessellation functions and traditional techniques.
- Become more familiar with vector-based artwork, and with the constraints and advantages of working with this format.
- Increase your expertise working with these art forms.
- Learn how to customize mosaics and tessellation settings to enhance artwork.
- Enable clone-based functions in creating tessellations.

Projects to be Completed:

- **(A) Southern Garden Book Jacket**
- **(B) End Game Movie Poster**
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

Mosaics cannot be created on layers; however, layers can be placed above a mosaic canvas, or a mosaic can be created, then floated, copied, and pasted into other documents.

Mosaics and Tessellations

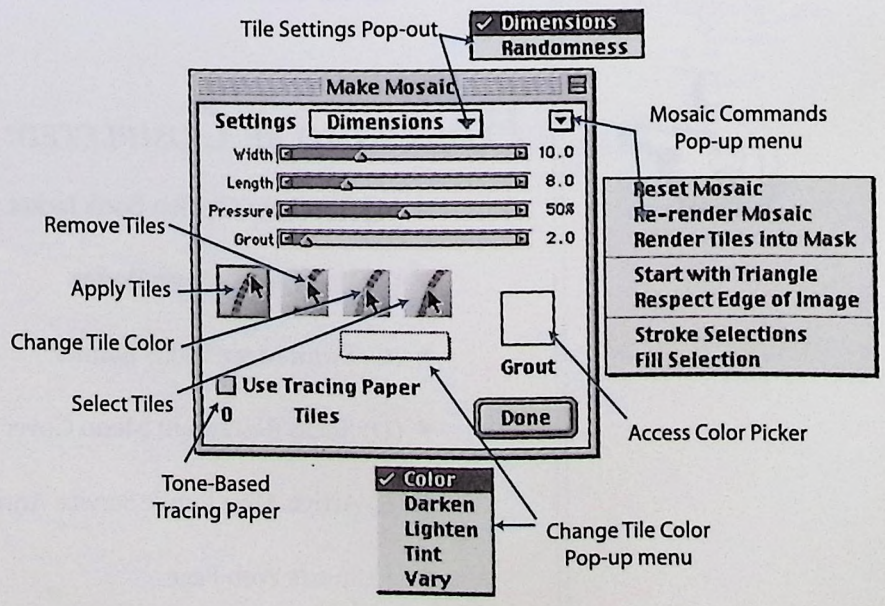
A traditional mosaic is an arrangement of bits of stone, ceramic tile, glass, shells, or pottery shards which are set in mortar, forming a likeness of a person, scene, or object. Traditional mosaics date back thousands of years. Tessellations are mosaics composed of non-rectangular tiles.

Painter's mosaics and tessellations are based on several of the same principles governing traditional mosaics. Traditionally, tiles are placed in grout to form a picture. Painter first lays down grout, then you place tiles within it. Mosaic tiles lie side-by-side, and never overlap. Painter's tiles also never overlap. Traditional mosaics use larger tiles for background subject matter, and detail is rendered with smaller tiles. It is wise to follow this traditional practice while making a mosaic using Painter. Traditional muralists laid the subject first with strong, defining lines of tiles. Next, the background or less important areas were filled in. To ensure the clarity of your Painter-generated mosaic, follow those traditional methods.

Painter's mosaics and tessellations are RIFF-based files. When the Make Mosaic command is selected, the document is filled with grout. Tiles appear when you drag your Mosaic brush. These tiles are vector-based, each tile's perimeter is defined and the fill color is described. Each tile is resolution-independent, so the artist can create a mosaic while working at a low resolution and then re-rendering the mosaic at a higher resolution with no loss of image quality.

The only other palette accessible while within the Make Mosaic dialog box is the Color palette.

RIFF is the only format that allows for continuous editing of mosaics. Other formats convert mosaic tiles to image-based information. The controls necessary to create mosaics are available in the Make Mosaics dialog box. Tessellations follow the same logic as mosaics and use the features available in this same dialog box. There is also a separate Make Tessellation dialog box which governs the stylistic choices for Tessellations.



You can exit from and return to the Make Mosaic dialog box as many times as you wish if the file is saved in the RIFF format.

The only palette available while in this dialog box is the Color Picker.

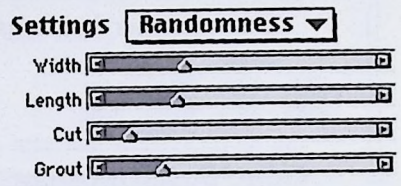
Hint for test driving the Make Mosaic feature: Instead of choosing Select All>Delete to clear the canvas, choose Reset Mosaic from the Mosaic Command's pop-out menu.

The Tile settings pop-out menu offers two choices: Dimensions and Randomness. In Dimensions, the Width and Length sliders set the tile.

The Pressure slider depends on stylus pressure and controls tile width. At 0%, a light stroke produces narrow tiles; heavier strokes increase tile width. The use of 100% pressure produces tiles of a uniform width, regardless of stylus pressure.

The Grout slider controls the amount of grout between tiles.

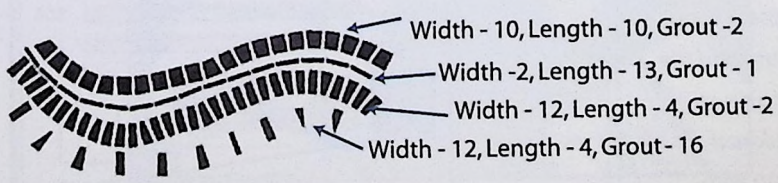
When Randomness is selected, the sliders change to reflect different variables. Randomness controls the uniformity of the tiles shape. Higher settings in the Width and Length sliders increase the differences between tile shapes.



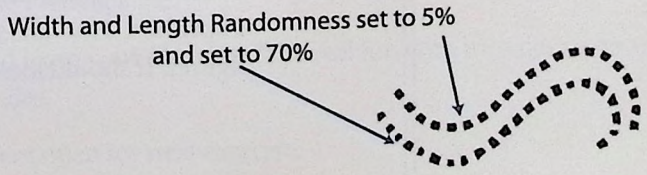
The Cut slider controls the angle of the tile edges. At 0%, each tile lies perpendicular to the stroke. Increasing this slider makes the tile's angle steeper.

Working with Mosaics

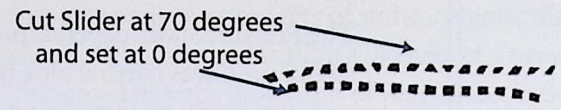
1. Create a new document to test tile and grout functions. Make it 300 × 300 pixels, with 72 ppi, and set the Picture type to Image.
2. From the Canvas menu, choose Make Mosaic.
3. Set up your Make Mosaic dialog box to Dimensions and try out different settings of tile length, width, and grout spacing. A few different combinations are shown below.



4. Reset your Dimensions sliders to an equal width and length with a narrower grout. Switch to the Randomness settings. Vary the Width, Length, Cut, and Grout sliders to get a good feel for the manner in which this control affects the shape and variety of tiles. A few examples are shown below.



5. Vary the position of the Cut slider to see the different angles that the tiles fit together.



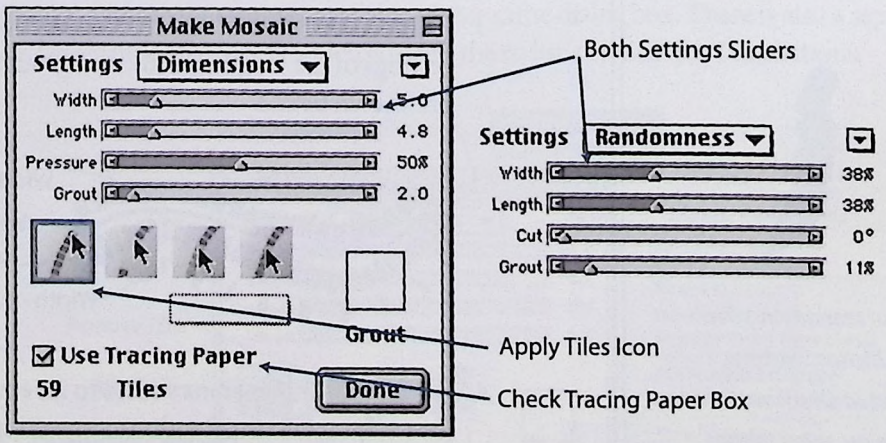
6. Create a small and simple mosaic.
7. Save your mosaic as a RIFF file named "Mosaic Test.RIF" into your **Work in Progress** folder.

Using Existing Art as Mosaic Source Files

Artists often prefer to base their mosaics on reference pictures using the Clone and Tracing Paper functions. It is easy to create a sophisticated mosaic following these steps.

Clone-Based Mosaics

1. Open the **Karate.TIF** file from the **SF-Painter** folder.
2. Create a clone by choosing Clone from the File menu.
3. Save the file as "Karate.RIF" into your **Work in Progress** folder.
4. In the Canvas menu, select Make Mosaic. Also, check the Clone Color box on the Color palette.
5. Set up the Sliders to look like the sample below.



6. Trace around the figures. Draw a course of tiles to define important lines, such as the belt, collar, and sleeve edges. Check your work by toggling off the Tracing Paper box. The "ghost" picture disappears, leaving only solid tiles to outline the figures. It should look similar to the following illustration.

Step 4: Don't be surprised that when the Make Mosaic command is chosen, your canvas turns white and the imagery seems to disappear. It is to simulate that the image is filling with grout. Turn the Tracing Paper option in the dialog box On and your imagery will appear!

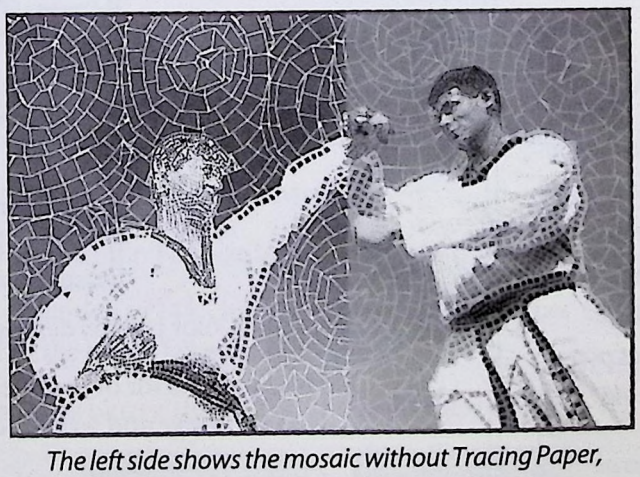
Be certain to check the Clone Color box on the Color palette.

The key to a realistic mosaic is to trace out the defining features first, and then fill in the less important tiles.

Keep your grout dimension smaller than the width and length of the tiles.

7. Use the Remove Tiles icon if you make a mistake.

8. Proceed setting courses of tiles within the figures. Notice that the initial tiles setting defines the way the newer tiles are laid. Vary the size of the tiles — smaller for details, larger for less important features.
9. Raise the Tile Dimensions sliders to increase the size of the tiles and continue setting tiles to fill in the background. (You can fill with straight strokes, or create a swirling mosaic effect similar to Persian mosaics.)
10. When you are satisfied with your mosaic, click the Done button.



The left side shows the mosaic without Tracing Paper, the right side shows with Tracing Paper.

11. Choose Fill from the Effects menu and Clone Source as the Fill type. The Opacity sliders in the Fill box control the sheerness of the overlay. A setting of 50% looks like the Tracing Paper.
12. Undo Step 11 and leave your file open. The real fun with mosaics starts after you have set the tiles.
13. Keep the document open for next exercise.

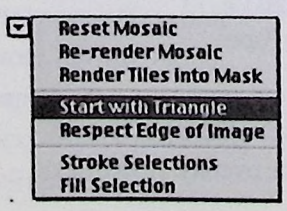
The shortcut keys for the Change Color Icon are as follows:

The "C" key for color.

The "T" key for tint.

The "V" key for vary.

If you have an intersection where a triangular shaped tile would fit perfectly, enable the Start with Triangle option in the Mosaic Commands pop-up menu and set the tile.



Fine-Tuning Mosaics

Once you have set the basic mosaic tiles, you can change individual tiles or groups of selected tiles by using the Change Color icon from the Make Mosaic dialog box. It is possible to vary the tile color by dragging over it in one of the modes in the pull-down menu.

The Color Choice reflects the current color in the Color palette.

The Tint mode applies a 10% Fill using the current color.

The Darken and Lighten settings adjust the value without affecting color.

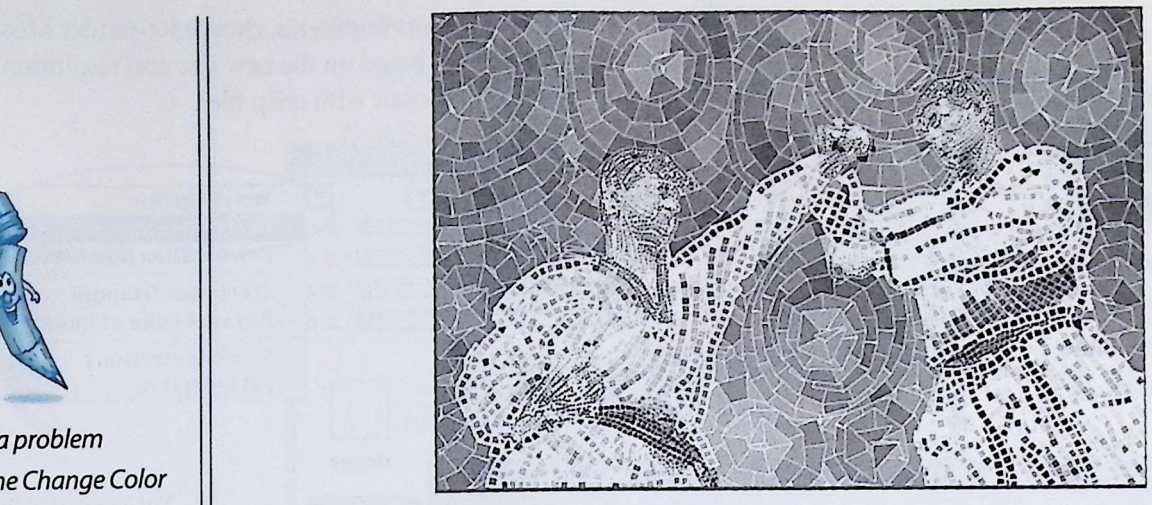
The Vary setting is based on the Variability slider set in the Color palette and is designed to broaden the family of colors analogous to the current color.

Adjust Tile Color

1. Open the Make Mosaic dialog box. Select the Change Tile Color icon. Select the Darken mode from the pull-down menu.

2. On the Color palette, deselect the Clone color box.
3. Drag your cursor over some of the tiles to darken and to add emphasis. Try this with the sleeve and wrinkle details and the shadows in the karate outfits.
4. Choose an orange hue in the Color palette and select Tint from the pull-down menu. Add a tint to one of the outfits.
5. Add tints to the swirls in the sky by choosing the Color palette, selecting a color, and applying a tint. The Color palette is available while you are active in the dialog box. There is no need to exit the box before choosing a different color to tint.

If you have a problem accessing the Change Color icon pull-down menu when returning to the Make Mosaic dialog box, click first on the Apply Tiles icon, and then on the Change Color icon. The pull-down menu will now become available.



6. When you are satisfied with the tinting, click Done to exit the dialog box.
7. Save your document and keep it open.

Mosaics and Vector Capabilities

It is more efficient to work on a small image first, then re-render to a larger image size. Vector-based art allows for this freedom.

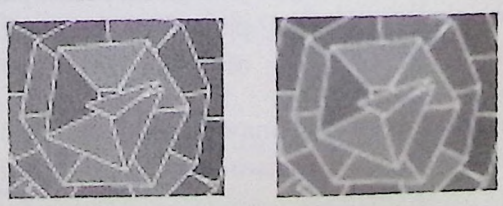
Simply "sizing-up" a pixel-based file causes it to be blurry because it is simply doubling or tripling the existing pixels. However, because Vector art is based on a defined area and a description of the fill (the tile and its color), it is possible to work on a small file and then re-size and re-render as a large image with no loss of detail.

Re-size and Re-render

1. For this part of the exercise, activate the mosaic from the previous exercise.
2. Choose Re-size from the Canvas Menu.
3. Disable the Constrain File Size box.
4. Raise the resolution to 144, change both the units to inches, type 10 in the width field, and let the height fall proportionately.

   The mosaic gets blurry; that's why we take the next step.

Tinting works best on tiles which already have value — not white tiles. If you want to tint a white tile, first darken it, and then tint it.



The crisp mosaic on the left has benefitted from re-rendering after re-sizing. The version to the right was re-sized, but not re-rendered. The blurry edges are unacceptable. Fortunately, there is a solution.

Any effects or painting will be lost if the mosaic is re-rendered. So re-render larger, then paint.

RIFFs allow constant access to the mosaic-in-progress.

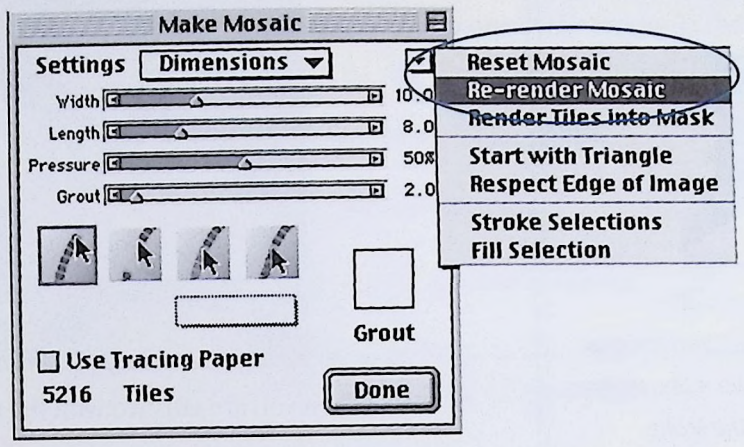
With the Select Tiles icon, you can select tiles of precisely the same color in a contiguous area by clicking on a tile while holding the Command/Control key.

Clicking on a selected tile will deselect it.

Press "A" to select all tiles.

Press "D" to deselect all tiles.

5. From the Mosaic Commands pop-out menu, choose Re-render Mosaic. Painter will recalculate the vector math based on the new size and resolution parameters and replace your blurry mosaic with crisp tiles.



6. Click the Done button to exit the Make Mosaic dialog box after the re-rendering is completed.

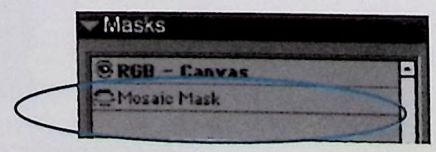
7. Leave your file open for the next exercise.

3-D Mosaics

Part of the charm of mosaics stems from their 3-dimensional aspect, as projected by little tiles or bits of stone set in mortar. Thus, a sense of depth and realism can be recreated by taking advantage of Painter's ability to generate masks and create surface texture.

Create 3-D Mosaic Tiles

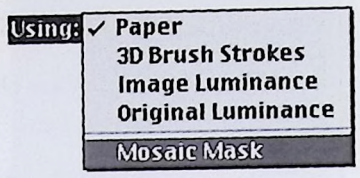
1. Open the **Karate.RIF** file from your **Work in Progress** folder.
2. In the Mosaic Commands pop-out menu, select Render Tiles into Mask. This generates a User mask based on the tiles.
3. When the mask has been calculated, click the Done button to exit the dialog box.
4. Look in the Masks palette and note the Mosaic mask. Any operation that can be performed on a mask also applies to mosaic mask, including acting as the basis of surface texture.



Mosaic mask is inactive and invisible, ready to be used for surface texture.

Re-rendering to a larger size can save you hours of production time.

5. Be certain that the RGB canvas is active and the Mosaic mask is not visible.
6. From the Effects menu, choose Surface Control>Apply Surface Texture.
7. From the Using pop-out menu, choose Mosaic Mask. Adjust the sliders until you have created the perfect 3-D tile effect.



8. Click OK to apply the Surface effects.

9. If any touch-up is necessary, or if you would like to add additional effects, feel free to do so.
10. Save and close this image.

Do not raise the Softness slider higher than a value of 1.5. The best range for mosaics is between .05 and 1.1 to make the tiles look truly multidimensional.

Tessellations

Tessellations are mosaics made with non-rectangular tiles. Traditionally, the most common tessellations are those created with rounded pebbles set in concrete.

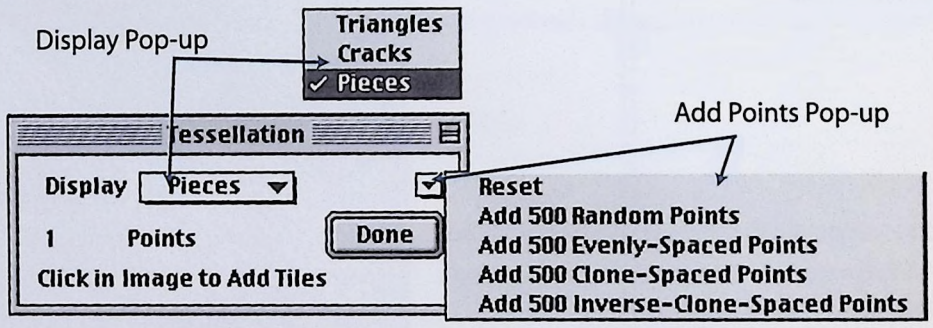
Painter creates tessellations by dividing the canvas into irregular polygon-shaped bits. The math that determines each polygon is based on the premise that a polygon is a set of points connected by line segments. You control the number of polygons (and how they are created) in a simple dialog box.

Tessellations follow the same constraints and have the same advantages as mosaics in that they are vector-based. Tessellations use their own dialog box but base many of their developmental parameters on choices made in the Make Mosaic dialog box.

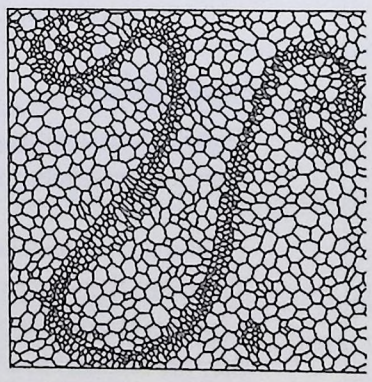
Tessellations can be created on a blank canvas or by using a clone source. They can be re-rendered larger and can have masks and surface effects applied to them.

Make Tessellations

1. Create a new document set at 300 × 300 pixels and 72 ppi. Save the file as an Image and press OK..
2. Choose Make Mosaic from the Canvas menu.
3. While in the Dimensions pop-up menu, set the grout to 2 and leave the grout color white.
4. Choose a bright apple green from the Color palette to define the tile color.
5. Press the Done button to exit the dialog box.
6. Choose Make Tessellation from the Canvas menu.



7. Select both Add 500 Random Points, and Add 500 Evenly-Spaced Points .
8. Draw your initials in the document. The line segments will be more dense along the lines you drew, creating a path of smaller polygons.



9. When your initials are perfect, click Done. Expect the tessellation to be green tiles with white grout.
10. Choose a dark blue in the Color Palette.
11. Select Make Mosaic from the Canvas menu.

The Color palette is always accessible when the Make Mosaic dialog box is open.

12. Select the Color Tile icon. Make sure that the pop-out menu is set to Color and trace over the lines defining your initials with blue.

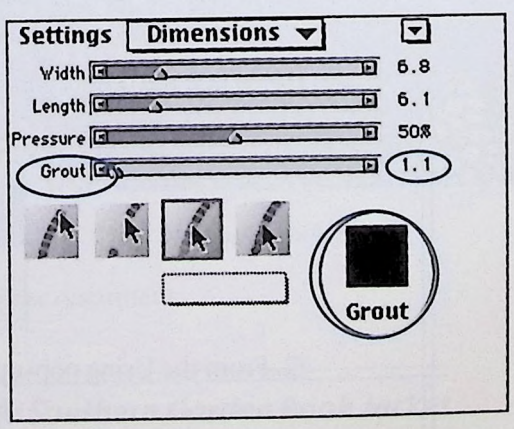
13. Click Done to exit the dialog box.
14. If you like, save this document as "Initial.RIF" into your **Work in Progress** folder or close without saving. The tiles can be rendered into a mask, re-sized, or painted.

Tessellations and 3-D Effects

Using the Clone Source with tessellations and with 3-D Effects creates an intriguing textural interest.

Clone-based Tessellation with Mask and Surface Texture

1. Open **Karate.TIF** from the **SF-Painter** folder. Choose File>Clone.
2. Save this clone as "Tessellation.RIF" into your **Work in Progress** folder. Be certain to change the format to RIFF.
3. Choose Canvas>Make Mosaic. In the Dimensions pop-out menu, set the Grout color to black and the Grout slider to 1.1.



4. Click the Done button to exit the dialog box.
5. In the Color palette, check the Clone Color box.

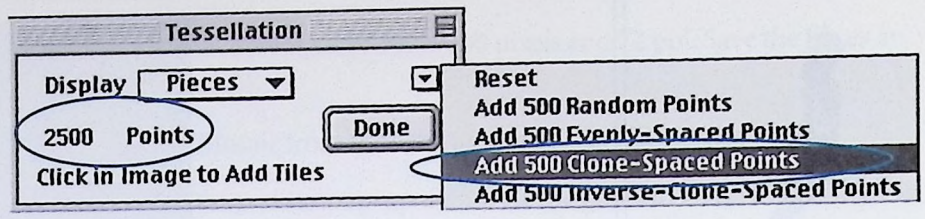
Do not be alarmed when your entire canvas fills with black grout after Step 4.

The lines that appear when you are creating your tessellation offer only a working view. These lines "preview" the tessellation in progress. They disappear as soon as the tessellation is rendered.

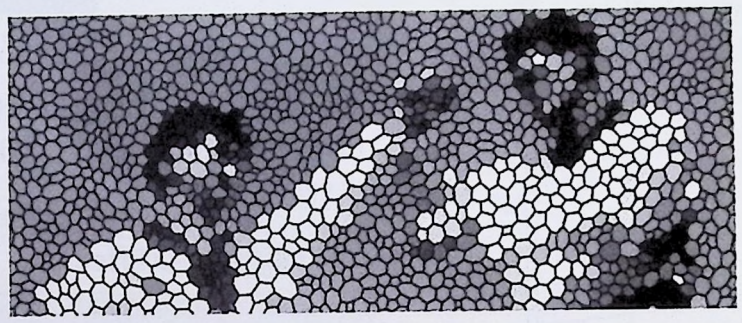
Clone-based points take into account the clone source's luminance. Lighter areas receive more points, hence, smaller polygons.

The last effect used is always listed at the top of the Effects menu. The shortcut key to access it is Command/Control-/.

6. Choose Canvas>Make Tessellation. From the Add Points pop-up menu, select 500 Clone-Spaced Points. Continue adding points to 2,500.

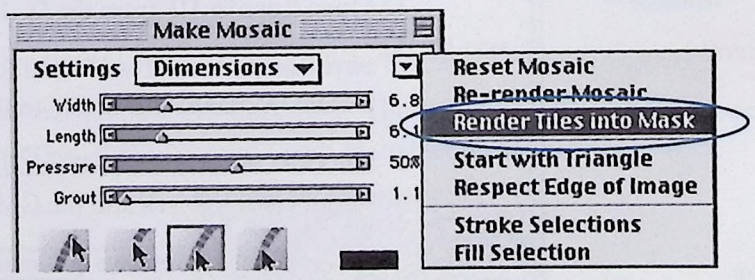


7. Click the Done button to exit the dialog box. It may take a moment for the rendering to complete.

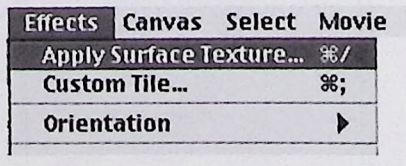


A portion of the tessellation-in-progress

8. Select Canvas>Make Mosaic.
9. From the Mosaic Commands pop-up menu, select Render Tiles into Mask.



10. When the rendering is complete, click Done to exit the dialog box.
11. Choose Effects>Surface Control>Apply Surface Texture.

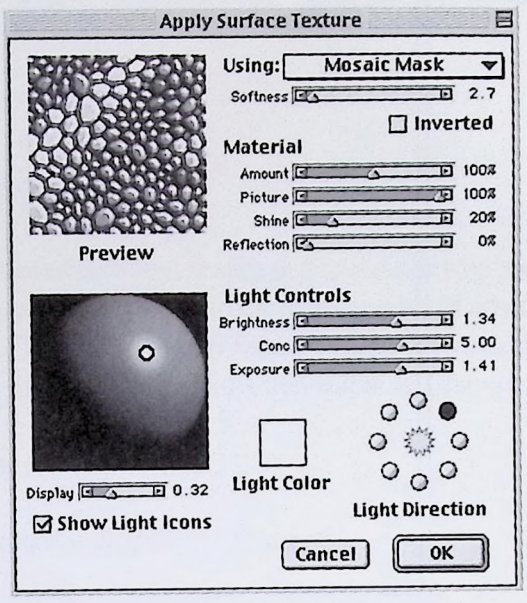


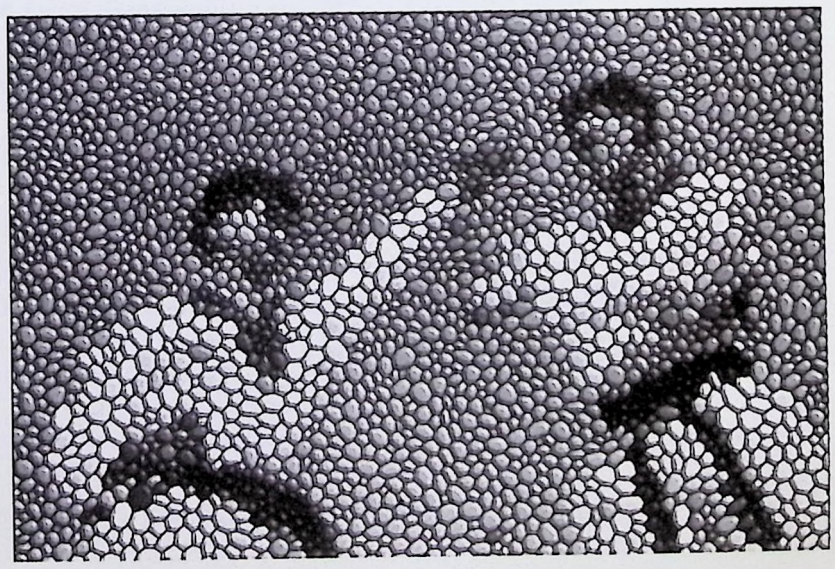
12. From the Using pop-up menu, choose Mosaic Mask.

If the Color Tile pop-up menu options are not immediately available, select the Add Tiles icon, then switch to the Change Color icon. They will now become available.

If you want to use a color present in the mosaic, sample the desired color by Command/Control-clicking on a tile containing that color.

13. Arrange the sliders to your liking. The configuration used to create the surface effect seen on the following tessellation is shown below.



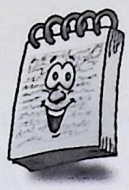


The final tessellation.

14. Save and close the document.

Complete Project A: Southern Garden Book Jacket

Complete Project B: End Game Movie Poster



Notes:

Chapter 9

Working with Shapes

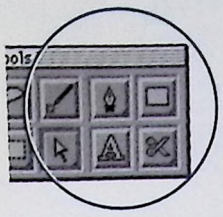
Chapter Objective:

To gain an understanding about shapes and tools used to create and manipulate in Painter. To develop your ability to create vector-based artwork and to use the unique features of Painter to modify them. To help you understand the similarities of layers and shapes, as well as how they differ. In Chapter 9, you will:

- Learn about the shape tools.
- Gain an understanding vector-based art.
- Learn to manipulate and edit shapes.
- Develop your skills to use shapes to create artwork.
- Become familiar with the Shape Attributes dialog box.
- Learn how to create compound shapes.
- Understand the similarities and differences between layers and shapes.

Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- **(C) Swim Meet Today Banner**
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page



The Shape Selection and Shape Editing tools are located in the right side of the Tool palette.

The shortcut key to display the Shape Selection and Shape Edit tools is "H." The shortcut keys for the Rectangular and Oval Shape tools are "I" and "J." The shortcut key for the Scissors is "Z." To access the Add point tool, click "A," to access Remove point tool, click "X."

The shortcut for the Shape Selection tool is the "H" key.

The shortcut key for the Text tool is the "T" key.

The shortcut to display the Set Shape Attributes dialog box is Command/Control-[.

Working with Shapes

Although the Rectangular and Oval Selection tool may look identical to the Rectangular and Oval shape tools, there are major differences. The Selection tools encompass every pixel within their borders. They work as if they capture those pixels.

Shapes differ from selections because they describe the perimeter that will be filled or stroked with a color or gradation. They are known as vector-based objects because they describe a vector and then describe the fill. This requires a very small amount of storage space.

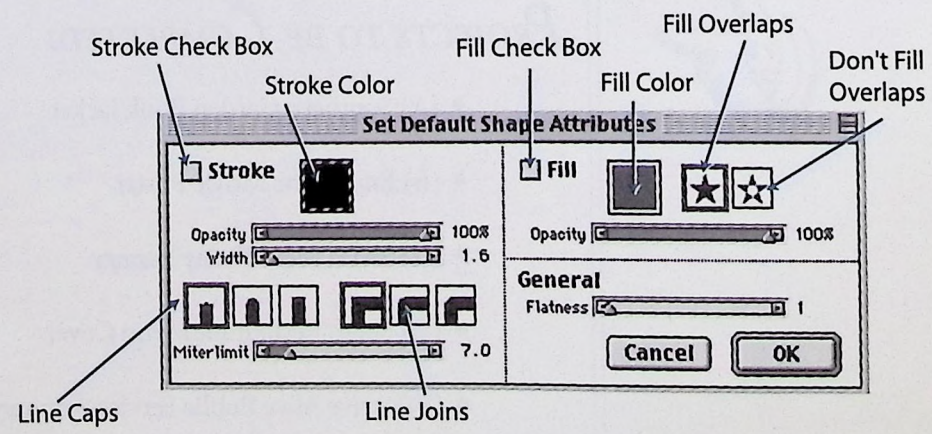
Because of this unique formula for describing an area and its fill, vector objects can be much larger with no loss of image quality. This is a main reason for the popularity of vector art within the graphic design industry. Type in Painter (such as within Illustrator and Freehand) is vector-based. This means type which is enlarged will not get fuzzy or jaggy. Conversely, type created in imaging programs are dependent on high-resolution for crispness and clarity.

There are five shape tools in Painter. The first two are the Rectangular and Oval Shape tools, used to create regularly shaped vector objects. Next are the Pen tool and Quick Curves tools used to create shapes using Bézier curves. The tool designed to move and manipulate shapes and text is the Shape Selection tool. This tool is located in the same position as the Adjuster and Selection Adjuster tool.

A selection may be converted to a shape and thus acquire the attributes associated with vector art. A shape may also be converted at any time to an image-based object, and be painted upon or treated as any other pixel-based layer.

The Shape Object Tools

Now is a good time to examine the items which can be modified in the Set Shape Attributes dialog box.



Two other ways of accessing the Set Shape Attributes dialog box are to double-click on the shape's name in the layer list, or to select a shape and click Return/Enter.

The Color palette is accessible while in the Set Shape Attributes dialog box.

Navigate to Edit>Preferences>Shapes. Enable the Big Handles checkbox. It make it much easier to select points and wings.

The stroke, its color, opacity, and stroke width can be modified by adjusting the controls on the left side of the dialog box.

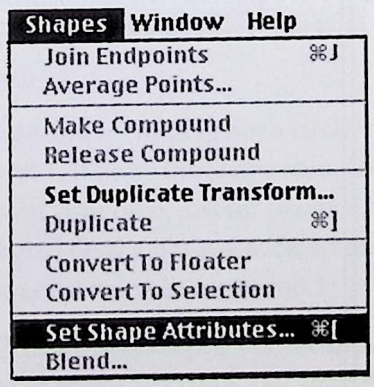
The stroke ends are controlled by choosing one of the three Line Caps: Projected, Round, and Butt.

There are also three ways a corner can be fashioned when two line segments are joined: Mitered, Rounded, or Beveled.

The Fill checkbox determines whether a shape is filled upon creation. Double-clicking on the color chip sends you to the Color Picker to choose a fill color. The two Fill method boxes, Fill overlaps and Don't fill overlaps, control the fill with a series of overlapping shapes — preserving their separate visuals. It is possible to change the method for how shapes are stroked and filled when they are created by accessing the Shapes preferences.

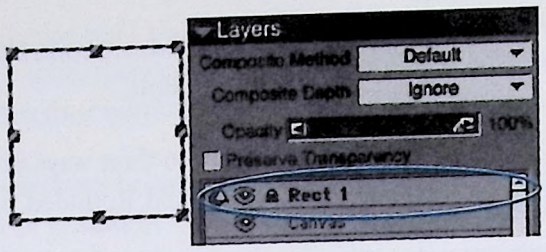
Examining the Rectangular Shapes

1. Open a new document that is 400 × 400 pixels, 72 ppi, and set to Image type. Set the background color to white.
2. Click OK to accept the parameters and exit the dialog box.
3. From the Shapes menu, select the Set Shape Attributes option.



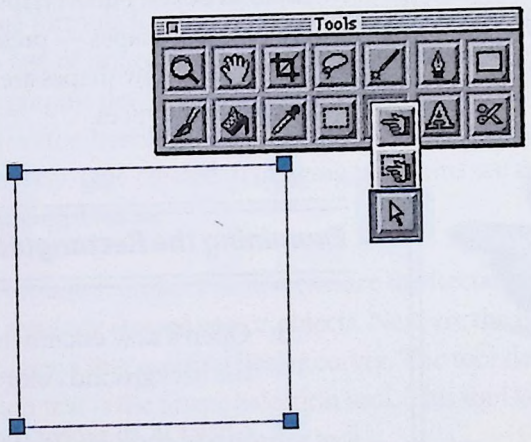
4. Disable both the Stroke and Fill checkboxes to keep the shapes simple and straightforward; uncluttered by fills and strokes.
5. Choose Edit>Preferences>Shapes. Set the default attributes to suit your style and close the box.
6. Choose the Rectangular Shape tool and drag out a rectangular box in your blank document.

7. Notice the bounding box surrounding your shape and the layer that appeared in the layer list. It has the Shape icon and is named "Rect1."

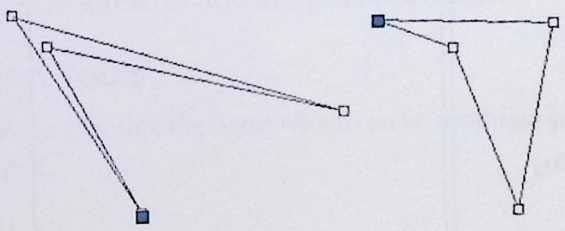


To Scale, simply drag on any point on the layer bounding box.

8. Select the Shape Selection tool. Notice that the bounding box turns into line segments joined by corner or anchor boxes.



9. Experiment by moving one anchor point to radically change the shape of the rectangle. (Try selecting the Shape Selection tool and dragging a marquee around the Anchor Point you wish to move.)



As you draw a shape, the Controls palette displays its dimensions.

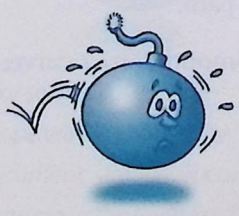
Blue denotes the active anchor point.

10. Next, drag on a line segment — not on the anchor point. Move the line segments around. Notice how the polygon only changes dimensions while seemingly glued down at the anchor point.

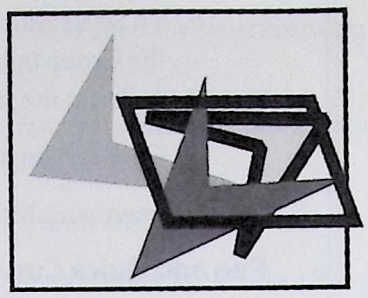
11. To move the whole shape, hold the Command/Control key while using the Shape Selection tool. Carefully drag on a segment. The whole shape should move.

12. Experiment creating different shapes, starting out with a rectangle. Try editing the stroke and fill in the Set Shape Attributes dialog box. Make five different shapes, stroking and filling them differently. Move them on top of one another, experimenting with the Fill overlaps, Stroke Width, and Opacity.

The Whole Shape Selection tool is a solid black arrow. Access it by pressing the Command/Control key while using the Shape Selection tool. The white, or hollow arrow moves segments or anchor points. These tools should be like old friends to those who use Illustrator, Freehand, or CorelDRAW.



The Adjuster Tool or the Whole Shape Selection tool (not the Shape Selector tool) must be used to move Grouped items.



13. When you are satisfied, drag over all of them with the Shape Selection tool and click the Backspace/Delete key. You now have clean, empty canvas to use. Keep the file open for the next exercise.

Oval Shape Objects

Lying beneath the Rectangular Shape on the main toolbox is the Oval Shape tool. Oval Shapes follow all the rules governing vector shapes and comply with the Layer logic established for objects which lie above the canvas in terms of their order, paintability, grouping, and transformation capacity.

Use the Oval Shapes

1. Click on the Rectangular Shape tool, and when the Oval Selection tool pops up, select it.
2. From the Shapes Menu, select the Set Shape Attributes dialog box. Set the Stroke Width to 30, Stroke Color to Black, the Fill to a light, bright blue and the Opacity to 100%.
3. Drag with your mouse and try to drag out a circle. Notice that in the list there is an item named Oval 1. It bears the Shape icon. (Note: If you've been creating oval shapes on your own, just for practice, the oval you create in this step might be numbered Oval 4 or Oval 6. Select and delete the extra ovals on the bottom of the layer list to avoid confusion.)
4. Draw a little cartoon using oval shapes. For the mouth, create an oval, drag over the shape with the Shape Selection tool, grab the anchor points at either side and pull out to form the smile. Do not hesitate to change the Fill color (in the Set Shape Attributes box) for the eyes, hair, nose, and mouth.

Clicking the Close button to close a Quick Curve shape is faster than hunting for the starting point to join endpoints.

To deselect a shape, click the Command/Control key and click anywhere off the path. Now you can draw another shape.

Wing handles and anchor points are similar to a plank balancing on a fulcrum.

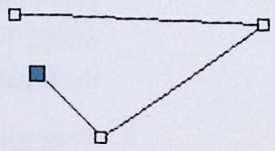
5. To Select All, drag over the entire cartoon with the Shape Selection tool. Click the Group button at the bottom of the Layers palette. Notice the elements which make up the face will all move together when dragged with the Adjuster tool.
6. Click the Ungroup button to revert the group to separate shapes.
7. Leave your blank document open for the next exercise.

Pen and Quick Curve Tools

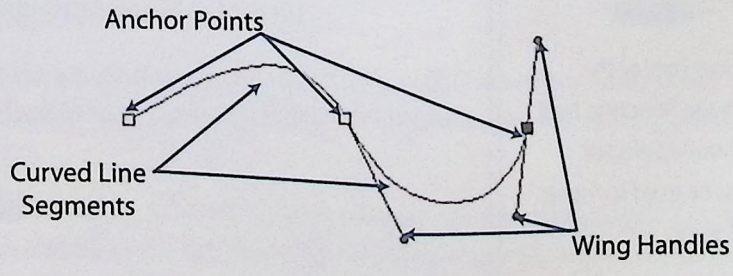
The Pen tool and the Quick Curve tool are the heart and soul of developing vector-based art. The Pen tool allows paths to be created with either straight line segments or graceful arches called Bézier curves. The Quick Curves tool allows for a more free-hand approach to drawing shapes. Both tools allow for open-ended or closed shapes. All paths, whether created with the Pen tool or Quick Curve tool, can be edited with the five editing shapes tools. All shape tools can be filled and stroked as determined by the parameters in the Set Shape Attributes dialog box. All shapes can be converted to layers and comply with the logic applicable to layers.

Use the Pen and Quick Curve

1. Select the Pen tool and click to make joined, straight line segments. Notice that each time you click, an anchor point is set. The last anchor point is active. It is a different, solid color.

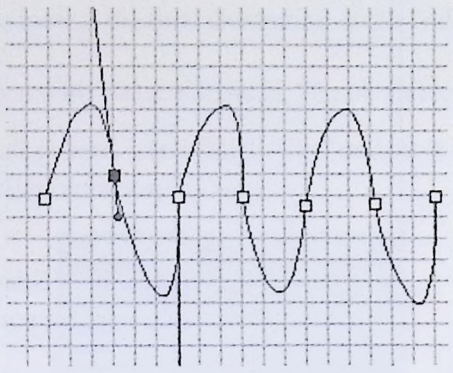


2. Click on top of your first anchor point. Notice that as your cursor nears the anchor point, a small round icon appears next to the cursor symbol. This is to alert you that the next click will close the path. Close the path.
3. This time, drag instead of clicking to set anchor points. Smooth Bézier curves will form. Let's take a moment to examine these curves.



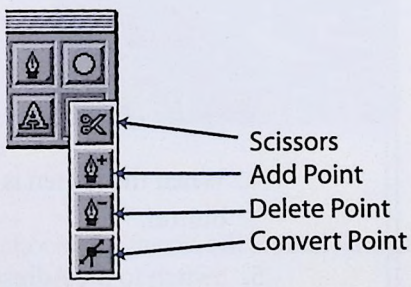
This basic Pen tool exercise is good for experimenting with the Pen tool controls (or lack thereof).

4. Drag over any Pen tool line segments you drew and click the Backspace/Delete key to start fresh with a blank canvas.
5. Make a series of anchor points with the Pen tool.
6. With the Shape Selection tool, move them into a line with equidistant points. Drag on the wing handles to make them even in height.

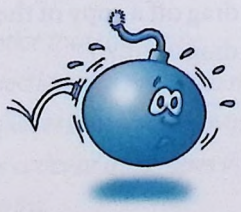


Steep curves are formed by dragging the wing handle far from the anchor point; shallow curves are created by laying the wing handle close to the line segment.

7. Use the editing shape tools to manipulate this curved line.

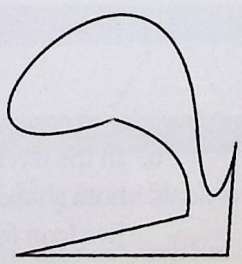


They are self-explanatory as their names describe their functions. The Scissors tool cuts segments so that new curves, or another open shape, can be joined. The Convert Point tool changes a smooth curve to a steep, sharp angle at the anchor point.



If for some reason your shape vanishes from the document, simply click on its name in the layer list. It will reappear. This might happen when both shapes and layers are present and the shape has no stroke.

8. Take a moment to work with the graceful curves.



9. Clear the canvas and leave the file open for the next exercise.

The Quick Curve tool.

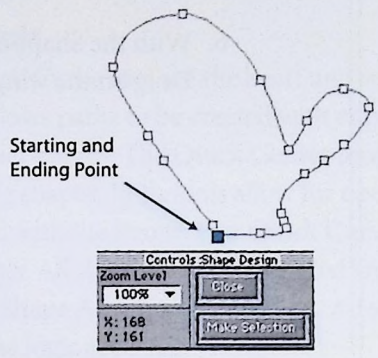
To add to an endpoint while working with the Quick Curve tool, click the Command/Control key and drag over the endpoint you wish to add to.

To turn off the layer border, click Command/Control-Shift -H.

A quick way to select a shape is to drag over it with the Shape Selection tool. Its anchor points will become the "indicator" color — denoting that it is the active shape.

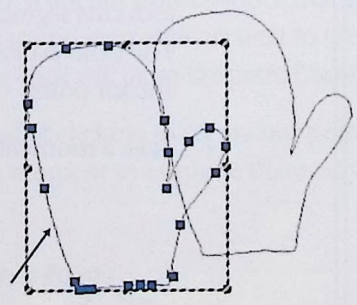
Quick Curve

1. Select the Quick Curve tool. Draw a simple, irregular shape, such as a mitten.
2. End the outline near the starting point.



3. With the Shape Selection tool, move any anchor points or adjust any curve handles to make your shape smooth and proportionally correct.

4. When the mitten is correct, return to the Control palette and click the Close button.
5. Switch to the Adjuster Tool, click the Option/Alt key and drag off a copy of the mitten. (You must place your cursor on a line segment to drag a copy.)



6. In the layers list notice there are two items — the mittens. Shift-click to select both shapes. Click the Group button. If you click the small triangle next to the Eye Icon for the Group, you will see the two items in this group — again, the mitten shapes.
7. From the Shapes>Set Shapes Attributes box, stroke and fill these mittens any color you wish.
8. Close the document without saving.

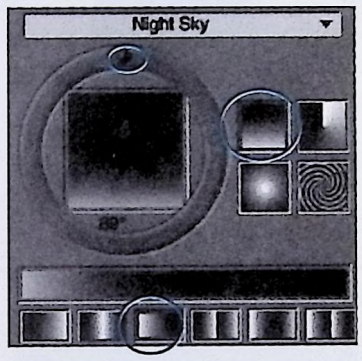
Vector Art

Many projects in the Graphic Design industry utilize vector art. Primarily because it prints smoothly from a modest file size. Remember, vector art can withstand extreme enlargement with no perceptible image distortion.

Use Shapes in Illustration — the Sailboat

Before you begin, take a look at the final illustration at the end of the exercise.

1. Create a new canvas with 500 × 900 pixels, 72 ppi, and set to Image type.
2. In the Art Materials palette, select "Night Sky" and set it up as a smooth linear gradient with the darkest sky at the top.

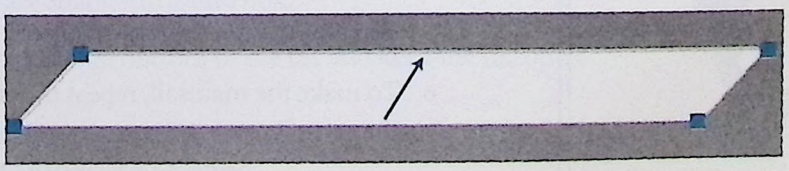


The Arrow keys will move selected items one pixel at a time: left, right, up, or down.

Notice that the Shape Selection tool turns into the Adjuster tool when moving the order or the shapes in the list.

To access the Shape Selection tool temporarily (while working with any Shape tool), click the Command/Control key.

3. Fill the canvas by choosing Effects>Fill and selecting Gradation.
4. In the Set Shape Attributes box, set the Fill to white, the Stroke to black, and the Stroke width to 1.6. Click OK.
5. With the Rectangular Shape tool, drag out a box to form a boat.
6. Select the Shape Selection tool and drag to the right on the middle of the top line segment to slant the boat, forming a bow of the sailboat.



7. Deactivate this shape by clicking in the blank area below the items in the list.
8. Keep the document open for the next exercise.

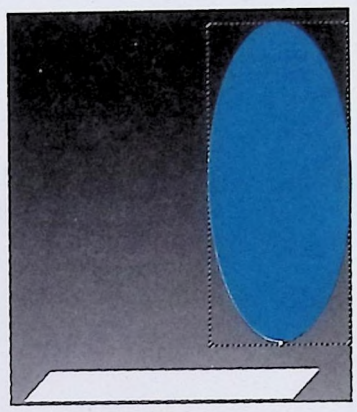
Hold the Shift key to constrain shapes to perfect proportions, such as squares and circles.

Change the name of a shape in the Set Shape Attributes box.

The shortcut to access the Set Shape Attributes is Command/Control-[, or double-click on the name of the shape in the layer list.

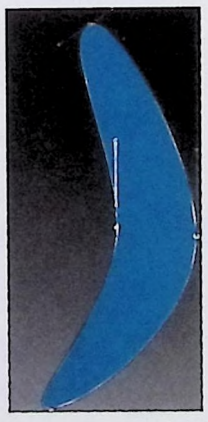
Create the Sails

1. Select the Oval Shape tool.
2. Drag out an oval shape to make the jib (the front sail).
3. In the Set Shape Attributes box, set the Stroke to 2 and the Fill to a powder blue. Change the name to "Jib" in the field provided.

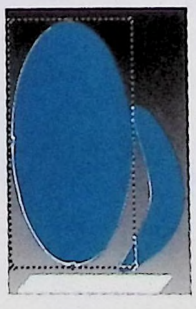


Your sailboat should be about 9 inches high.

4. With the Shape Selection tool, manipulate the anchor points and wings to form a full sail.



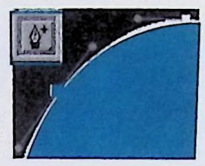
5. Deselect the jib.
6. To make the mainsail, repeat the above procedure — drag it taller and wider than the jib.



Click sharply with the Pen tool to draw straight lines. Do not drag the tool, not even a little.

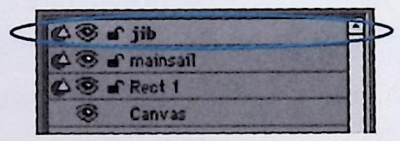
To move a shape to the front or to the back of a stack of layers, select it and click the Back and Front buttons on the Control palette.

7. With the Add Point editing tool, place an anchor point on the upper-left quadrant of the mainsail.



8. With the Shape Selection tool, drag the anchor points and wing handles around to create a full mainsail. If it is necessary to adjust the jib, select its name in the layer list to activate its anchor points and wing handles.

9. Change the order of the sails by dragging the jib to the top of the list. This will layer the jib over the mainsail.



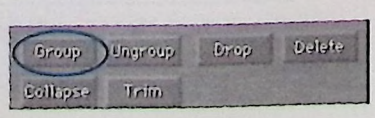
10. Click beneath the items in the list to deselect active shapes.
11. Keep the file open for the next exercise.

Make the Mast

1. Choose the Pen tool and add a mast by clicking at its top and base.
2. Adjust its stroke width to suit, make it white, and change its name to "Mast" in the Set Shape Attributes box.
3. Drag it to the bottom of the list and keep the file open.

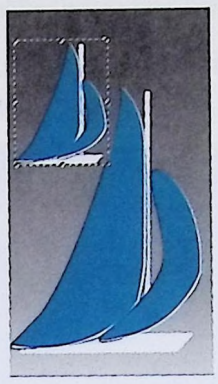
Group and Duplicate Shapes

1. Shift-click to select every item in the list.
2. Click the Group button.

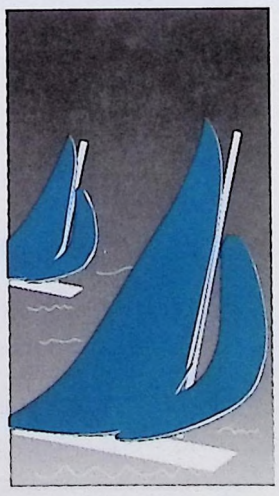


Creating illustrations with shapes is one very valuable way to make poster art. Vector images can print out large from a tiny file.

3. With the Adjuster tool, hold down the Option/Alt key and drag off a copy of this group. This will create a duplicate sailboat.
4. Place the cursor in the corner and drag to make the new sailboat appear farther away.



5. Rotate it slightly by selecting the Adjuster tool and placing your cursor over a corner point on the layer bounding box and dragging. Wait for the icon to turn into the Rotation symbol. Rotate the lead boat too.
6. Click in the blank area below the items in the list to deselect all layers.
7. With the Quick Curve tool, make some waves. Adjust the stroke width and color until you are satisfied with the result.
8. Save this illustration into your **Work in Progress** folder as "Sailboats.RIF" and close the file.



The Sailboats.RIF illustration should look like this.

Complete Project C: Swim Meet Today Banner

Chapter 10

Special Effects

Chapter Objective:

To learn about the options available under the Effects menu. To create special effects as plug-in Dynamic Layers. To understand the process of creating an effect and how to set parameters to individualize it. To gain an understanding of the power and functionality of effects. To develop an efficient workflow for dealing with special effects that allow for creativity. In Chapter 10, you will:

- Become familiar with the Effects menu and they way the options are grouped.
- Learn to use effects to change the basic look of an image.
- Gain an understanding and practice creating some popular techniques with effects — those that cannot be achieved in other image-editing programs.
- Learn about the advantages of using a Clone Source.
- Become familiar with Dynamic Layers and learn when to use them.
- Work with the Fade command.
- Learn to use the F/X brushes to create special effects.

Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- **(D) Shells Restaurant Menu Cover**
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

Painter applies effects to the entire canvas if no area is selected.

Open the Arts Material palette before entering an effects dialog box to ensure accessibility.

Special Effects

Painter offers a diverse range of effects which can be applied to an image. The first type of effect is accessed through the Effects menu. It is here that you will find features that can alter the image's optical qualities (like sharpening and blurring), lighting controls, color parameters, orientation, and a cache of esoteric mapping effects to enhance your imagery. Many of these effects are based on traditional painting and photographic effects.

Effects can be applied to the canvas, to a selected area of the canvas, or to an entire layer. If you wish the effect applied to a shape, dynamic layer, or a reference layer, Painter can automatically change it to a pixel-based layer before applying the effect.

A terrific feature in Painter is that all of the effects dialog boxes allow for access to the Art Materials palette while setting effect parameters. This allows for unrestricted experimentation with paper texture and color while still in the effects dialog boxes. Changes in the selected color and paper texture appear in the effects Preview window as on-the-fly updates.

In previous chapters we have made use of the Surface Control and the Lighting effects, so you will be familiar with the general format of the logic employed to create special effects.

Another type of effect is controlled by using Dynamic Layers. These layers are unique because they can be modified repeatedly with no adverse effect on underlying imagery. Dynamic layers can be moved, reapplied, or have their settings changed.

There are three general types of Dynamic layers: those that add new, dynamic imagery, those that alter underlying imagery, and those that make an adjustment to underlying imagery.

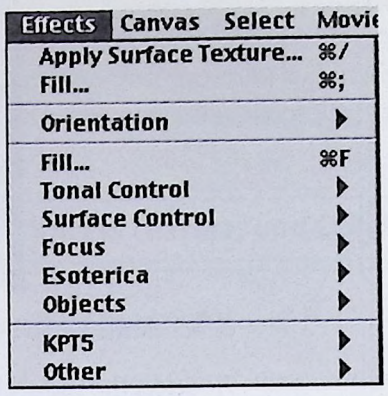
The final way to add a special effect is by using the F/X brushes. These brushes offer a wide range of brush-based image manipulation.

The Effects Menu

The Effects menu is broken down into various categories, each dealing with diverse areas of image manipulation. Some of them add a twist to imagery and others improve the image quality or correct a deficiency in the original. Since both kinds are integral to the creation of fresh imagery, we will explore them all, paying special attention to those which have proven invaluable.

Painter ships with additional effects: three filters from Kai's Power Tools (KPT). Painter will also load any 3rd party plug-in filter if you put an alias of that filter in Painter's Plug-in folder before launching the program.

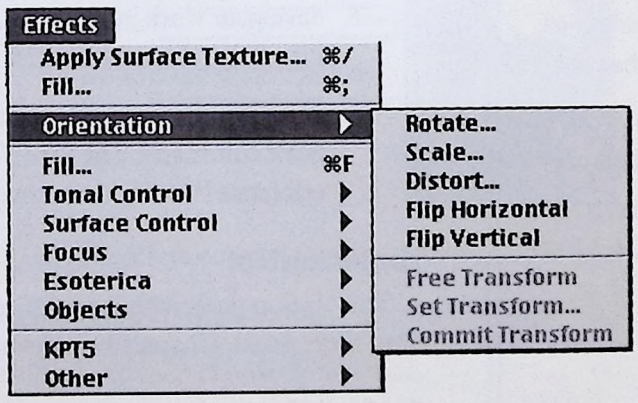
Painter's Effects menu is divided into six groups, according to the type of functions the filters perform.



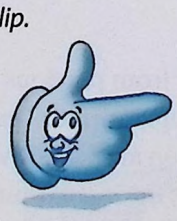
The first section holds the two effects most recently accessed. These effects can also be accessed again by using the corresponding shortcut keys: Command/Control-/ and Command/Control-;.

Orientation

The Orientation section contains a group of commands that manipulate all or part of your image's orientation. For example, you can scale, rotate, or flip your picture.



Extend the canvas width or height to accommodate an image's rotated size before rotating. Otherwise, the image will clip.



Example: a 500 × 200 pixel image rotated 90° will need an additional 300 pixels added to the width to display the entire rotated image.

Work with Orientation

1. Open the file **Bike Racers.TIF** located in the **SF-Painter** folder.
2. Choose File>Clone. (Always work on a linked clone.)
3. Select the biker located on the left with the Lasso tool. A loose selection is fine.
4. Choose Effects>Orientation>Scale. In the ensuing dialog box, set the scale to 150 %. Leave the Constrain Aspect Ratio and the Preserve Center checked.

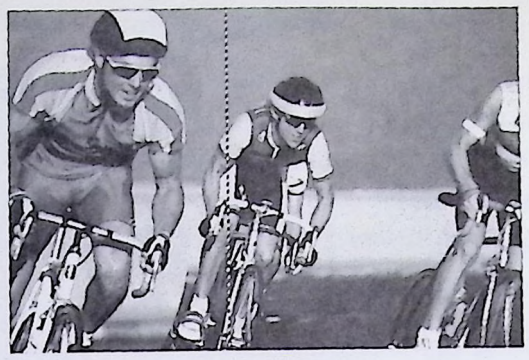
You can scale manually while in a dialog box by dragging on a corner of the selection.

Use Command/Control-(/) as a shortcut for the last effect.

The shortcut key for the second-to-last effect is Command/Control-; (semi colon).

Establishing a clone-source – clone relationship as a matter of standard practice will sometimes mean the difference between a successful image and a lot of wasted time.

5. Click OK to apply the effect.



6. Click the Drop button to drop the layer.
7. Select the Cloner brush with the Straight Cloner variant. Set the brush size to 2.5 in the Control palette. Paint back in the original street and curb behind the biker.

8. Save your work into your **Work in Progress** folder as "Bike Racers.RIF". Leave it open for the next exercise.

The other commands located in the Orientation section work similarly to the Scale command. The Free Transform and Commit Transformation relate to reference layers and are covered in Chapter 6, Layers.

Tonal Control

This section deals with issues of color and value. Because of the immense importance of these issues, Chapter 11 is devoted exclusively to them.

Surface Control

Two of the commands located in this section will be familiar from previous exercises. You have already seen how powerful the Surface Control>Apply Surface Texture and Apply Lighting effects are. The other commands in this section are equally versatile in creating effects based on the selected color and paper texture, the image's luminance, or the luminance of the clone source. There are often variability sliders to set the gray threshold, or minimum or maximum sliders which significantly change the look of the effect. The Art Materials palette is accessible while you are within the dialog box, so it is easy to experiment with combinations. We will explore some of the effects not previously addressed.

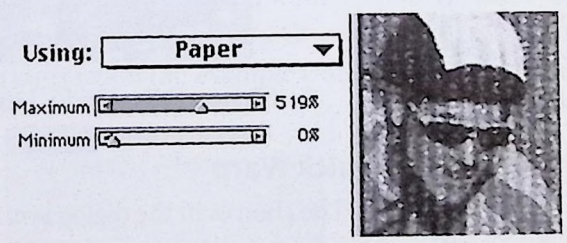
Dye Concentration

Dye concentration adjusts the vibrancy of colors within the image based upon the parameters set by a Using pop-out menu. Consider texture as high and low areas. The Maximum controls the dye on the high areas. The Minimum controls dye in the low areas. The wider the range between the maximum and minimum settings, the greater the contrast. Set your sliders to different combinations and try different Using choices.

As long as the Art Materials palette is open on the screen, the paper choice can be changed at any time — it can even be changed when you are in the Apply Surface Texture dialog box. Painter updates the preview in the dialog box to reflect the new paper texture chosen.

Use Dye Concentration, Express Texture, and Quick Warp

1. Continue in the open **Bike Racers.RIF** file.
2. Choose Effects>Surface Controls>Dye Concentration.
3. Choose Uniform Adjustment (uniformly changes color), Paper (adjusts color by mapping it over the paper texture), Image Luminance (uses the image's own edges to define parameters), Original Luminance (uses the clone source to define adjustment parameters), and User Mask (if one is available from the Mask menu) from the Using pop-up menu.
4. While using the Preview box, adjust the Minimum and Maximum sliders.



The paper texture used in this illustration is Ribbed Pastel.

5. When you are satisfied with a setting, click OK to apply.
6. View the effect, and then choose Edit>Undo.
7. Leave your picture open for the next exercise.

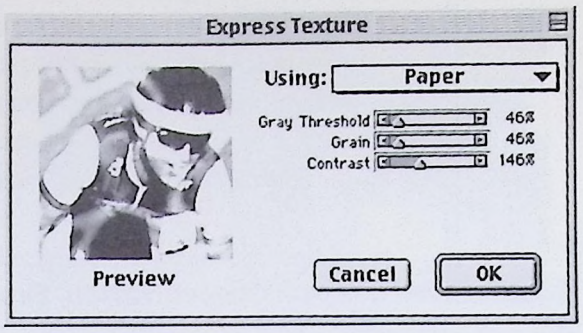
Notice that the scaled imagery automatically becomes an Image floater.

Use Express Texture

The Using pop-up menu offers textural choices. When we choose Paper, the Gray Threshold slider sets the point, determining what value of gray is the limit for expression as texture in the image. Grain controls how much texture appears and the Contrast option adjusts the contrast.

1. In the Paper palette, choose an extreme paper texture, such as Impulse.
2. From the Effects menu choose Surface Controls>Express Texture.

3. Try these settings. Click OK to apply.



4. To add color back into the image, choose Fade from the Edit menu. Adjust the sliders until just the right amount of color is present. Click OK to accept the fade.

5. Choose Edit>Undo. Leave the file open.

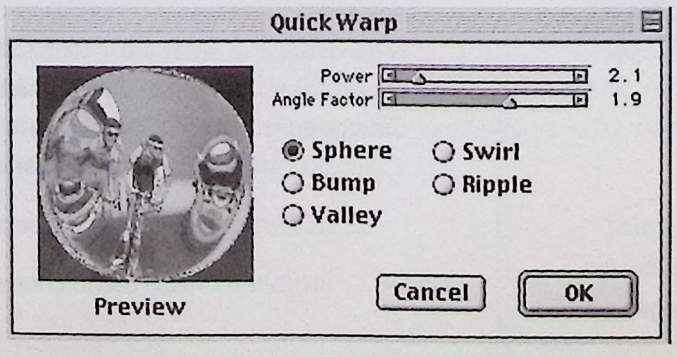
Since you have a clone source, it is possible to use a Cloner brush to touch up areas that have too much texture.

Quick Warp

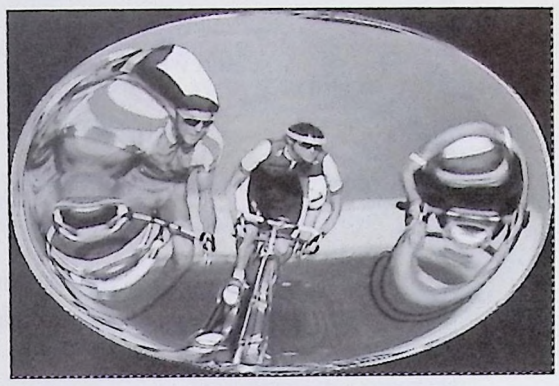
The choices in the dialog box are twofold. First is a type of warp: Sphere (like a reflection on a chrome bumper), Bump (warps the center towards you), Swirl (makes the image spiral), and Ripple (concentric rings of warps, like a stone dropped into still water). The power and angle factor sliders vary the intensity and angle of the effect.

Control Quick Warp

1. Select Effects>Surface Controls>Quick Warp.
2. Experiment with different slider settings and warp methods.



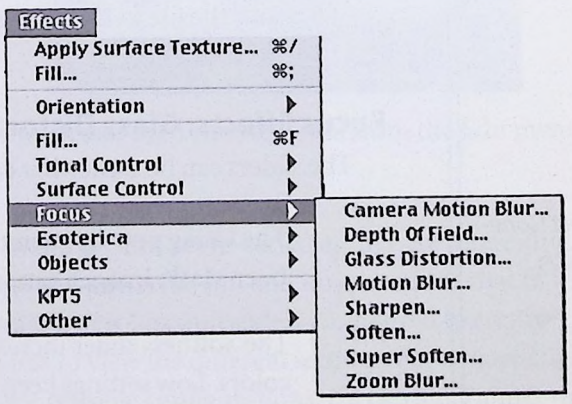
The image resulting from this setting is shown below. Feel free to experiment with all the different effects available in the Quick Warp dialog box.



3. Settle on a Quick Warp you like and save this file as "Spherical Bike Racers.RIF" into your **Work in Progress** folder. Close the document.

Focus

This section of the Effects menu deals with the distortion of imagery, closely replicating that of traditional optical effects. These effects work particularly well on subject material which could naturally be subject to these types of distortions. Action sports work well for motion blur. Depth of field works well with imagery already containing distinct subject/background relationships. Glass distortion is well suited to imagery that improves with abstraction (an example would be looking at a subject through bevelled glass).



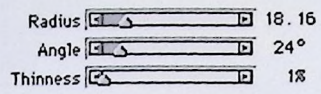
Use Focus Effects: Camera Motion Blur

Dragging in your image establishes the path along which the "camera" shakes. This simulates the jitter or camera-shake typical in long exposures. The best effects result from short strokes. Raising the bias increases the effect.

1. Open **Bike Racers.RIF** from your **Work in Progress** folder.
2. Create a clone by choosing File>Clone. Select Effects>Focus> Camera Motion Blur.
3. When you're satisfied with your simulated camera motion blur, click OK to exit the dialog box.

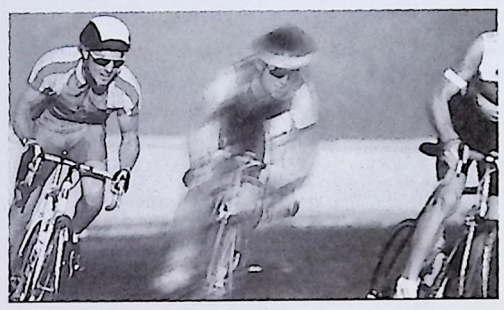
4. Observe your work, then Undo by pressing Command/Control-Z. With the Lasso tool, select the middle racer in the picture.

5. In the Focus sub-menu, choose Motion Blur. Adjust the sliders until you are pleased with the effect. Click OK.



Radius makes the motion look faster. Angle sets the apparent direction of travel. 0 degrees is 3 o'clock. Thinness blurs the image 90 degrees to the angle of motion.

6. Deselect the blurred area. Now, with the Cloner brush set to Soft Cloner, paint back some of the original racer.



7. Save the file as "Speeding Racer.RIF" into your **Work in Progress** folder and close the file.

There are many times when a sense of excitement is created by a camera-shake, like a night picture of twinkling lights.

The shortcut for Select None is Command/Control-D.

Take care to "Puff" back the imagery — do not drag with your cursor.

Focus Effects: Glass Distortion

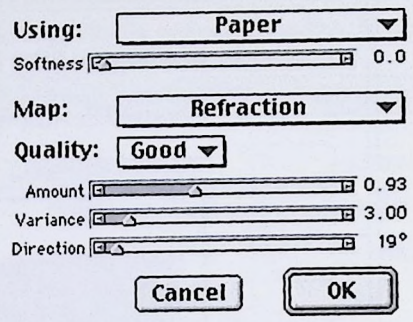
The sliders can be somewhat confusing, so let's look at them briefly:

- The Using pop-up menu offers various effects — Paper, 3-D Brush Strokes, User Mask, Image Luminance, and Original Luminance.
- The Softness slider increases the smoothness in transitions between displaced colors. Low settings keep the distortion tightly spaced.
- The Map pop-up menu contains the type of displacement. Refraction simulates looking through frosted glass. Vector Displacement nudges pixels in a specific direction. Angle Displacement adjusts pixels toward a specified angle.
- Amount controls the degree of distortion.
- Variance creates ghosts or echoes of the distortion around the center of the displacement.
- Direction controls the direction of displacement. 0 degrees corresponds to 3 o'clock.

Using Glass Distortion

1. Reselect the original **Bike Racers.TIF** from the Window menu. Use File>Clone to make a clone. With the clone active, go to the Effects menu and choose Focus>Glass Distortion.

2. In the Art Materials palette, set your paper to Basic or Handmade Paper. Try the settings shown below. Click OK to apply.

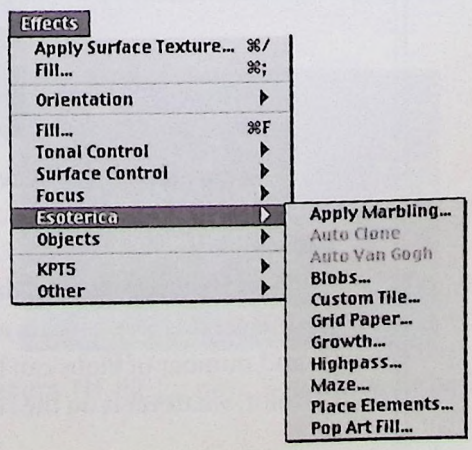


3. Admire your work and then choose Undo from the Edit menu.

The additional effects listed under the Focus heading are similar to the ones we tried in this lesson. Feel free to try them out before proceeding to the next exercise. You will especially love the Zoom Blur effect.

Esoterica

The effects found in this section are as varied as they are interesting. They are a collection of strange and powerful, fun and unique effects that fit into no other category. Each has a preview box and sliders configured to control the effect parameters. Move the sliders to view the different settings. For a more comprehensive explanation of all the possible configurations, check your Painter manual.

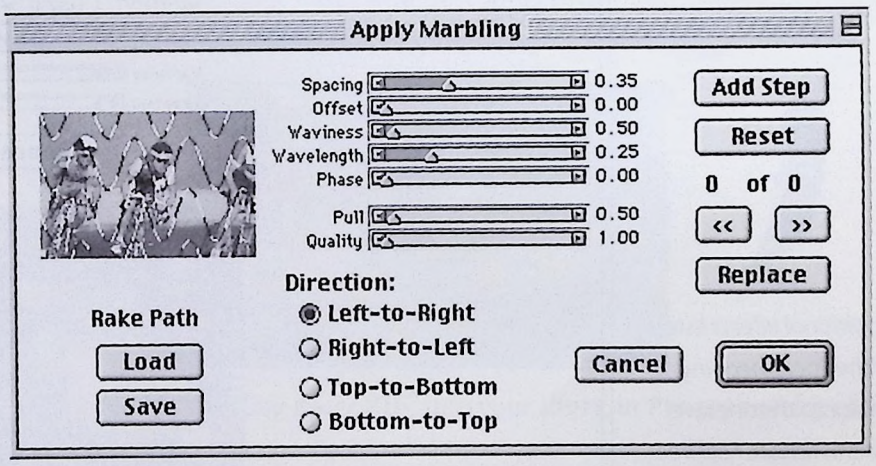


Apply Marbling

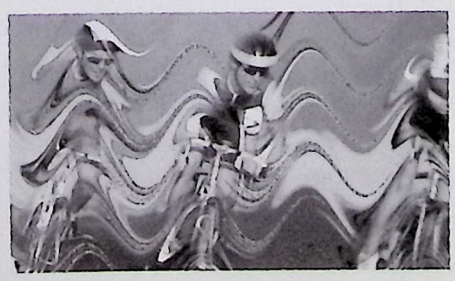
Marbling creates an effect like dragging a comb through a pan of white house paint that has drips of dark paint in it. Streaks of the dark paint are drawn out from the drips. By setting the sliders in different positions you can control the waviness of the "drag" or rake. The direction of the rake is also controllable. There are several you can load, and an option to save a marbling recipe that you create.

Use Esoterica: Apply Marbling

1. Reselect the **Bike Racers.TIF** from the Window menu.
2. Choose File>Clone, then Select Effects>Esoterica>Apply Marbling.



3. Take a few moments to try the effects created by the sliders. Undo any marbling you experiment with. Now, click the Load button.
4. Choose the T2B Rake and click OK to load, and click OK again to apply the marbling to your bike racers. It looks too wavy, so paint back some detail using your Brush, Cloner brush, Soft Cloner.



5. Save the file as "Wavy Racers.RIF" in your **Work in Progress** folder and close.

Experienced users simply press the Return/Enter key for OK. So, in Step 4 of the Marbling exercise, you would press the Return/ Enter key twice to OK the Load and the Apply.

Always work with a clone/ clone source pair when using Esoterica items.

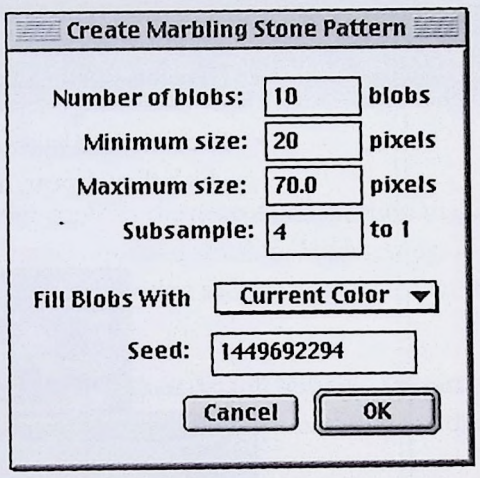
Blobs

Blobs are different sized drips of color that drop into the image. They displace the original imagery — such as thick paint dropped into a liquid picture. The size limits and number of blobs can be numerically assigned. Blobs can be filled with the current color, whatever is on the clipboard (Paste Buffer), or the selected pattern.

Use Esoterica: Blobs

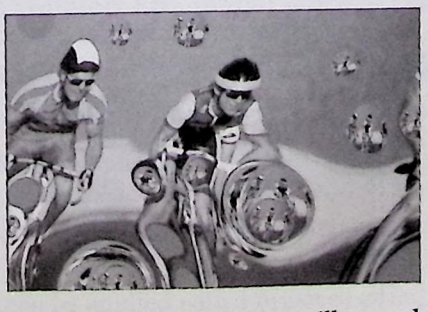
1. Reselect the **Bike Racers.TIF** file from the Window menu. Choose File>Clone.
2. Select as much of your image as possible with the Oval Selection tool.
3. Choose Edit>Copy, then deselect. In the Art Materials palette, set your primary color to red.
4. Select Effects>Esoterica>Blobs. Set the text fields and fill pop-up menu as shown below for blobs perfectly proportioned to the image size.

Hint for Step 2 in the Blobs exercise: Circular selections copied to the clipboard result in more spherical looking blobs.



5. Click OK to apply the red blobs.
6. Return to Effects>Esoterica>Blobs. (It will be the first item in the Effects menu because it was the last effect used.) Next, change the Fill to Using Paste Buffer and click OK. The new blobs are filled with tiny racers, and they blob in the image area as well as within the first red blobs.
7. Apply Blobs again at this setting.
8. Paint back to cover unwanted or distracting blobs using your Brush, Cloner brush, Soft Cloner.
9. Save and name the file "Bike Racers Blobs.RIF" into your **Work in Progress** folder and close.

The seed number will most probably differ from the one shown here. It is a number which randomizes the placement of the blobs. This number changes each time an effect is applied. Change it if you wish.



10. Close the **Bike Racers.TIF** file for now. You will come back to it.

The keyboard shortcut for Deselect is Command/Control-D.

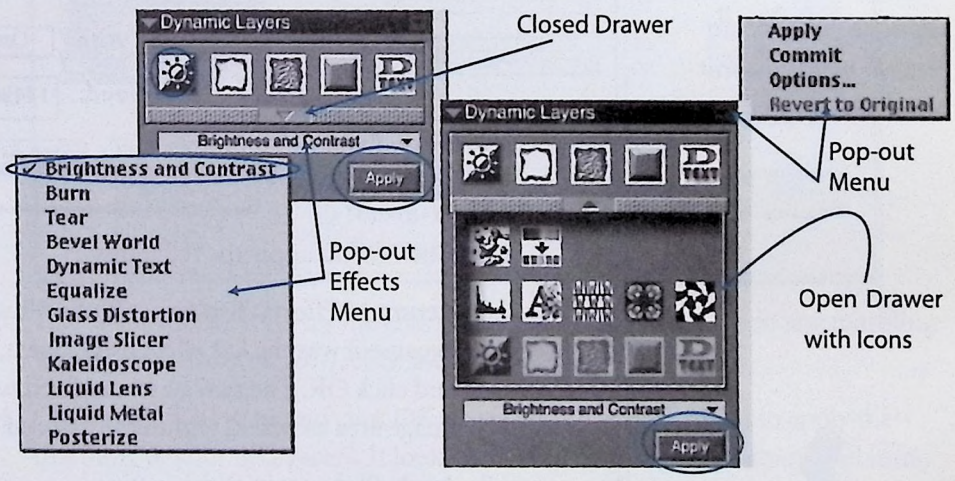
The shortcut to Copy is Command/Control-C.

The keyboard shortcut to access the Art Materials palette is Command/Control-3.

Dynamic Layers

Dynamic Layers are an interesting and editable way to apply effects to an image. There are a couple of things you should know before working with them.

- The Dynamic Layer's dialog box can be accessed by clicking the Apply button.
- Some of these effects layers (BevelWorld, Burn, and Tear) require an area be selected in advance.
- There is no option to cancel while within a dialog box. You must click OK to exit and then choose Edit>Undo. Or, after exiting, choose Revert to Original from the Objects Palette>Dynamic Layers menu.
- To reenter a Dynamic Layer's dialog box, double-click its name in the layer list.
- Since they are layers, they obey all the rules governing layers, such as the order in which they appear, hiding, opacity, and composite method.



Dynamic Layer palette.

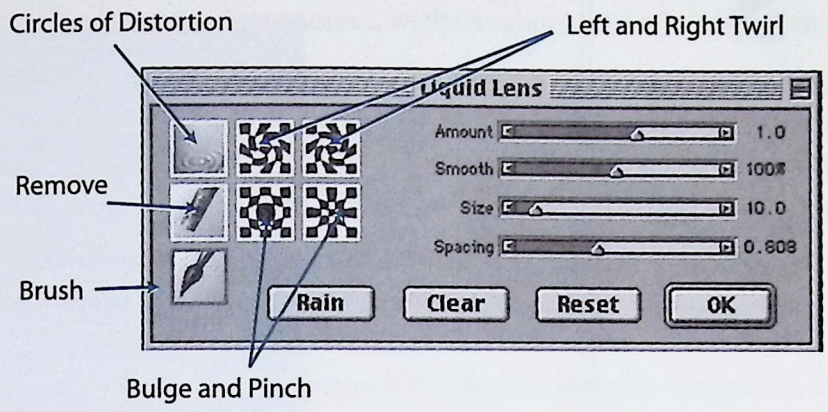
We will use the image-enhancement Dynamic Layers in Chapter 11. There are also several that deal directly with Web creation. Those will be addressed in Chapter 13. There are plenty more to explore.

Using Dynamic Layers: Liquid Lens

1. Open the **Swimmer.TIF** file from the **SF-Painter** folder.
2. Choose Clone from the File menu.

If you try to paint on the Dynamic Layer, or change it in any way other than through the dialog box, Painter will automatically commit it to a pixel-based layer.

3. Choose Dynamic Layer>Liquid Lens.
4. Immediately click the Apply button. This action sends you to the dialog box.
5. Examine the dialog box.



The Amount slider controls the degree of distortion that is applied. The Smooth slider blends and smooths the distortion. High settings are the smoothest transitions. The size and spacing sliders control the diameter of the distortion and spacing between dabs.

Reset returns the sliders to their default settings. To start over, click the Clear button and continue. Rain applies drops of distortion that emulate rain on a window.

6. Try the different tools at different settings. Drag with the Circle tool to form distortions. Stroke on distortions using the Brush tool. Don't hesitate to use the Remove tool to clear specific parts of the distortion.

7. Save As "Distorted Swimmer.RIF" in your **Work in Progress** folder and close.

Liquid Metal

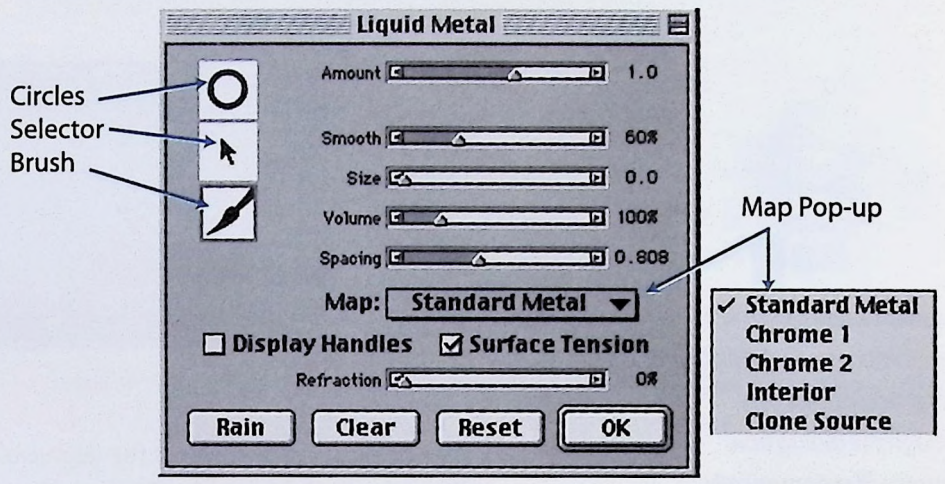
This Dynamic Layer function allows for distortion that looks like painting with metal (think of painting with mercury) and with a liquid. Whether the media looks like metal or a liquid is dependent upon the Refraction slider. The higher the slider setting, the more the effect looks like droplets of water on the image.

The Liquid Metal effect can be applied with a brush or as individual globs of metal. The metal can be moved around after the initial application using the Select tool.

Double-click on the Dynamic Layer's name in the layer list to re-enter the dialog box.

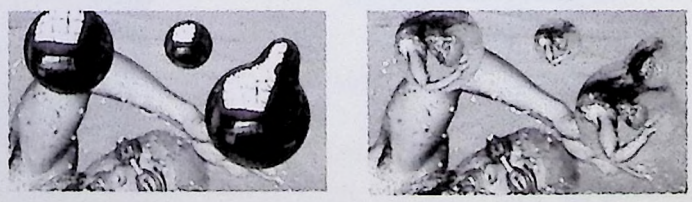
Sliders control the amount, diameter, smoothness, spacing, and volume. Negative amounts magnify underlying imagery — like a drop of water does.

There are five different reflective qualities available in the Map pop-up menu.



Use Dynamic Layers: Liquid Metal

1. Reselect the **Swimmer.TIF** file from the Window menu.
2. Choose Clone from the File menu.
3. Select Liquid Metal from the Dynamic Layer palette and click Apply.
4. Create some globs of metal above the swimmer with the default settings and Circle tool.
5. View these globs in the different map modes.



Standard Metal and clone source mapping.

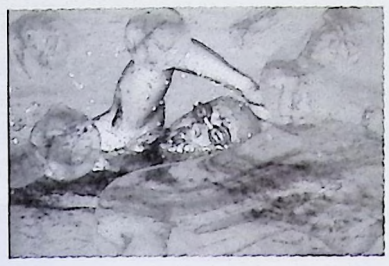
6. With the Select tool, move a glob toward another. It will act like mercury and want to merge into the other metal. This tendency is controlled by the Smoothness slider.

To commit the effect, choose Commit from the Dynamic Layer's pop-out menu .

You can remove metal by selecting it with the Select tool and pressing Delete/ Backspace.

Another good reason to have a clone source is that it is an option in the Map pop-up menu.

7. Select the Brush tool and set the Amount to "1", the Smooth option to "100%", the Size to "10", the Volume to "60", and the Spacing to "0.34". Use Standard Metal. Drag out a stroke. Increase the size to "40" and the volume to "100%". Notice how the stroke plumps up.
8. Change the map to Clone Source, set the Amount to "-1.6", and the Refraction slider to "65%".



9. Save the file as "Liquid Swimmer.RIF" into your **Work in Progress** folder and close all open files.

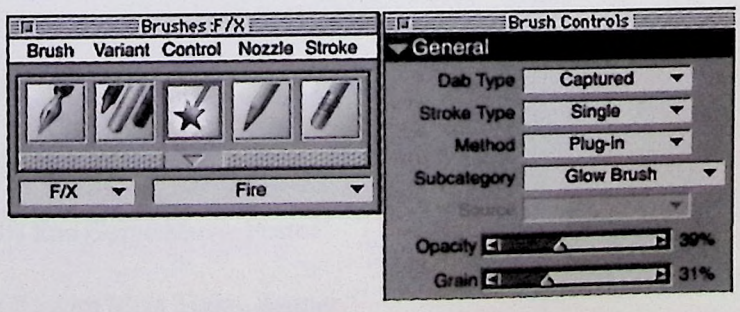
New F/X and Photo Brushes

The F/X (Effects) and Photo brushes that ship with Painter represent a breakthrough in brush creation. New effects, previously not supported by a brush, are available from these two groups. Each has a set of variants appropriate to its name and functionality. They are fully adjustable either though the Brush Control palette or from the Control palette.

Use F/X Brushes

Liquid Metal involves complicated calculations. Extreme slider positions generally mean having to wait.

1. Open **Bike Racers.TIF** from the **SF-Painter** folder.
2. Choose Clone from the File menu.
3. Choose the F/X brush and set it as shown below.

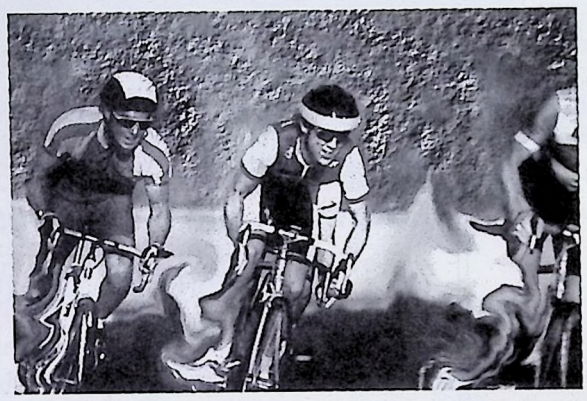


4. Add flames to the backs and legs of the racing bikers. Notice that the more you paint, the hotter the flames look.
5. Switch to the Glow variant and add a glow around their right sides.
6. Choose the Squeegee variant. Make its size around 10 pixels, and squeegee the fire out until it looks like an inferno trailing the racers.

F/X Fire works best against medium value, detailed backgrounds, but they work poorly on plain white and black areas.

If the flames appear too faint, raise the opacity on the Control palette.

7. Next, select the Photo brushes. The camera is the icon for this category.
8. From the Variant menu, choose Add grain.
9. In the Art Materials palette, choose Handmade Paper or Basic Texture.
10. Paint around in the sky and watch the paper texture appear. Vary the amount of texture by using the Opacity slider on the Control palette.
11. Finally, select the Saturation Add Variant brush. Use this brush to heighten the brilliance and intensity of the colors.
12. Save the file as "Flaming Bikers.RIF" into your **Work in Progress** folder and close all open files.



The completed "Flaming Bikers."

Complete Project D: Shells Restaurant Menu Cover

Chapter 11

Color Controls

Chapter Objective:

To learn about Painter's features for correcting, adjusting, manipulating, and assigning color space to images. To understand the optical qualities of light and how basic color theory relates to color correction. To become familiar with adjusting those relationships to improve or alter the quality of a digital image. To be comfortable with industry-level procedures for improving image integrity. In Chapter 11, you will:

- Learn how to color correct using the Tonal Effects menu.
- Work with adjusting the brightness and contrast of an image.
- Become familiar with the terms and practices involving Equalize, Histogram, Black Point, and White Point.
- Develop skill in adjusting a picture's curves.
- Practice using the Photo brushes to enhance an image.
- Become familiar with color sets and learn how to create your own, load an existing set, or change the layout of a set.
- Work with special color-controlled effects such as Posterize and Posterize Using a Color Set.

Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- (F) Sports Web Page

Color Controls

Painter offers several different types of image-adjustment features to correct, alter, manipulate, and manage colorspace more efficiently. Painter offers color management features for inkjet or offset printing, photographic film, and Web design. These features include: Output Preview, Video Legal Color, and new "Web-safe" colors and brushes.

Additive (or optical primaries) are not the same as pigment primaries, which rely on reflective light, not transmissive opacity for color.

Painter's color model is based on HSV color space (Hue/Saturation/Value). Color models based on light properties are called additive color models. (Equal amounts of the primary color wavelengths added together equal white light.) Red, Green, and Blue are the additive primary colors. Their complementary colors are Cyan, Magenta, and Yellow — the CMY in CMYK printing (or subtractive) colors.

Painter's colorspace is transmission-based (light passing through a slide or through the monitor).

Additive or optical primaries:	Red	Green	Blue
Subtractive or printing primaries:	Cyan	Magenta	Yellow

The tonal and chromatic information of an image's color is controlled by the manipulation of these three pairs of complementary colors. The tonal controls located in the Effects menu are based on the optical laws governing their relationships.

Painter 6 supports CMYK. When saving to CMYK, never convert your only copy — be certain to save a full RGB copy as a backup.

Painter describes a color in terms of its hue, saturation, and value. Hue is the family of color, or its position on the color wheel. Saturation is the brilliance, intensity, or chroma. Highly saturated colors in RGB colorspace will not print as they appear on screen because inks cannot reproduce the entire gamut (or range) of RGB colorspace. Value is the lightness or darkness of a color. Increasing a value (lightening it) creates a tint. Darkening it (decreasing it) creates a shade.

The HSV controls are located in the expanded section of the Color palette and in the Photobrush controls.

An image can often be improved or its impact heightened through the use of traditional photographic techniques such as Dodge and Burn. These are also located in the New plug-in (Photo) brushes.

Loading and creating color sets is an easy way to save special (custom) Color palettes and is also a great time-saver. Painter offers a array of preset Color palettes ranging from a Pantone set, a Candy-color set, and a Web-safe color set. Customizing existing sets, creating and saving new sets, and annotating are all easily done and can be readily accessed.

Red/Cyan

Green/Magenta

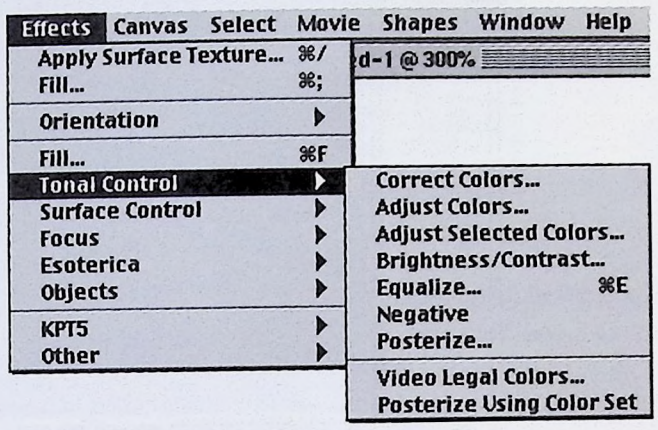
Blue/Yellow

Each primary "curve" controls itself and its complement.

Tonal Controls

Located in the Effects palette is a wide array of features designed to adjust existing color in an image. These Tonal Control features are based on the photographic principles of color adjustment and color correction, and follow purely physical and optical laws. These are the same rules that traditional photographic color printers have used to create balanced color pictures since Kodak invented color film.

Tonal control features are shown below.



Correct Colors

The Correct Colors dialog box is based on gamma response curves. These are graphic representations of the shadow-to-highlight distribution of image information along a diagonal line on a grid. The horizontal axis represents input values; the vertical grid represents the output values. The general idea is to correct the colors by changing the relationship of the input and output positions.

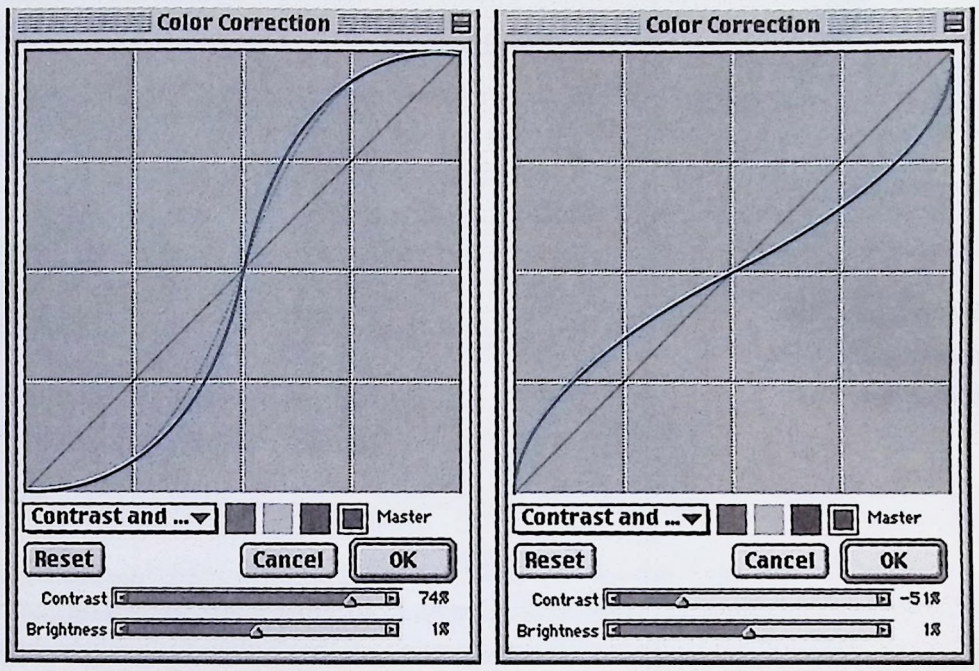
In the Correct Colors dialog box, you can begin color correcting in one method, and as long as you don't exit the dialog box, you can then move on to the other three options.

The shadows in the image are represented by the "toe," or low end of the diagonal line. The highlights fall in the area called the "shoulder" (higher in the graph). The diagonal line represents an equal input/output relationship. If you make the "curve" steeper, you will increase the contrast. You've changed the input/output relationship by changing the input and output position.

There are four different options to choose for adjustments. The first is for simple brightness and contrast, which are controlled by sliders. The second is Curve, and allows for manual positioning of the curve. Place your cursor exactly on the diagonal line and drag. The Effect slider controls how far your dragging moves the curve while low values allow for subtle changes and high values allow for radical changes. The third choice is Freehand, which allows you to draw the desired input/output value directly on the grid; this is the method for bizarre, solarized effects. The final method is Advanced, the only option that allows for numeric input of the values at the five critical points: shadow tone, 1/4 tone, midtone, 3/4 tone, and highlight. It is most often used when a printer or film technician wishes to reproduce an image precisely "by-the-numbers" either to test calibration or to reproduce to compare to a known output value or device.

Use Color Correction to Improve Colors

1. Open the **Beach Boy.TIF** file from the **SF-Painter** folder.
2. Choose Effects>Tonal Control>Correct Color. Moving the Contrast slider to the right increases the contrast, to the left decreases the contrast.



Increased contrast on left, decreased contrast on right.

3. Click the Reset button and set the Contrast slider to 30%.
4. Move the Brightness slider to the left to darken the image's overall tones. Set it to -21%.
5. Choose Curve from the pop-up menu.

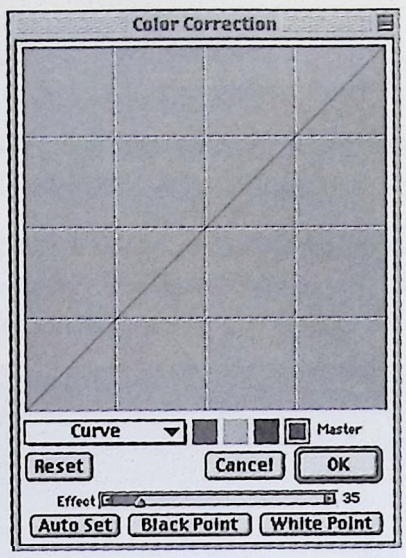
   Take a moment to examine the controls located in this dialog box. The small color chips indicate which color (and its complement) are to be adjusted — red controls itself and cyan, green controls itself and magenta, blue controls itself and yellow.

   Auto Set calculates the image's black and white points. The buttons marked Black point and White point are for assigning the darkest and lightest value in the image. This should always be the first step to correcting an image.

Moving the sliders repositions the input/output relationships of the image's contrast and brightness. If you're making a curve steeper, you are assigning midtones to either higher or lower values.

The keyboard shortcut for Correct Colors is Command/Control-Shift-K.

Auto Set works best on normal daylight exposures. It works poorly on non-standard images, such as a sketch on colored paper.

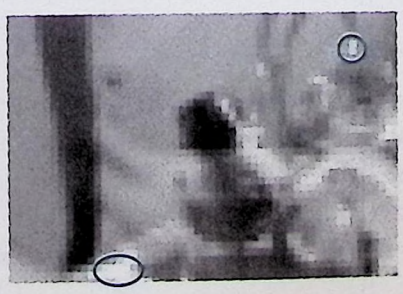


6. Click OK. Close the dialog box to perform the next step.

7. With the Dropper tool, sample the very blackest pixels in the boy's sunglasses. (You must select the Black point before entering the Correct Color dialog box. This sampling assigns black to all colors of equal or darker value.)

8. Return to the Correct Colors dialog box. Access the Curve Controls from the pop-out menu. Click on the Black point to assign black as the pixels sampled in Step 7. Examine the redistribution of the tonal values as expressed by the curves. Click OK to exit the dialog box.

9. Select the Magnifier tool and drag a marquee over the area of the boy's shorts and drink. The only white values are in the fabric and the highlights on the straw.



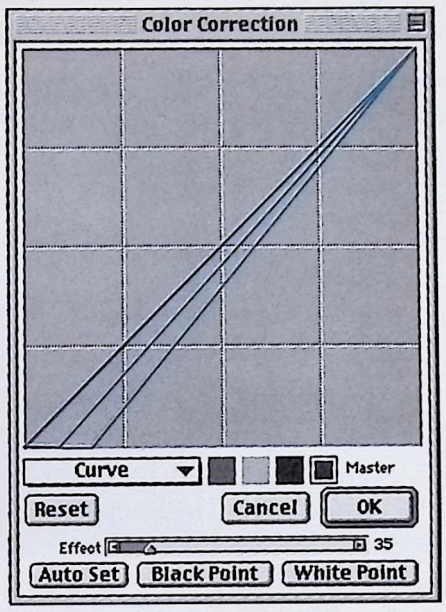
The whitest areas are located in the white fabric of the shorts and in the highlights on the straw.

Setting the black and white points first often clears up color casts resulting from poor contrast.

The keyboard shortcut to re-enter the last Effects dialog box (Correct Colors, in this case) is Command/ Control-/.

Small moves are all it takes to shift a color from unacceptable color-cast to believable color. Don't go too far!

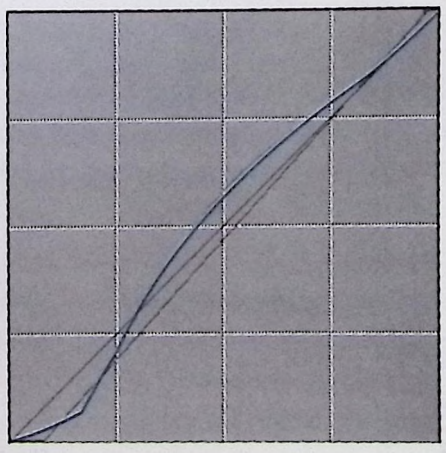
10. With the Dropper tool, sample the whitest value in the picture. Now, choose Effects>Tonal Control>Correct Color to display the Color Correction dialog box. Access the Curve pop-out menu. Click to set the White point. (Magnify the image.) Your redistributed curves should look similar to those shown below, and your picture should be greatly improved.



11. Select the red chip. This will allow you to make color-cast adjustments to the red/cyan bias.

12. Move the Effect slider to 128. This will make the next adjustment affect the image on a larger scale.

13. Place your cursor directly on the red curve near the middle. Drag upward to increase the red in the image, downward to shift the values to more cyan. Make the red curve bow slightly upward to increase the red (warmth) in the skin tones.



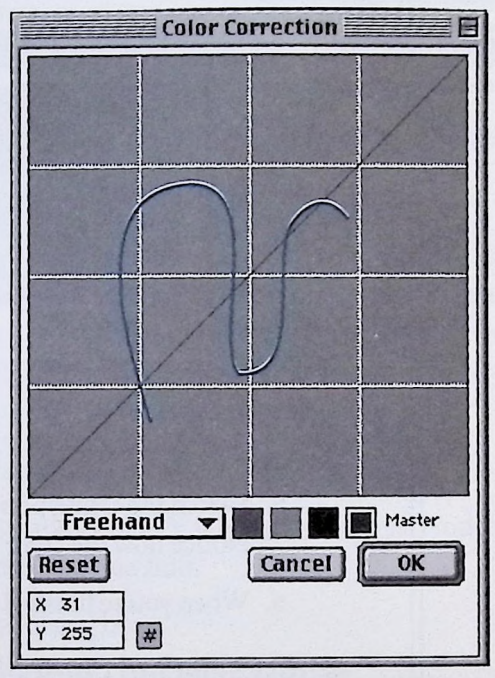
14. Click OK to apply these color changes to the picture.

15. Save this file as "Beach Boy.RIF" into your **Work in Progress** folder. Keep the file open for the next exercise.

Different results can be obtained by manipulating specific color-pairs: R/C, G/M, and B/Y while in the Freehand dialog box. Select the color chip that isolates that pair and scribble.

Use Freehand Curves to Create Wild Effects

1. Return to the Correct Colors dialog box and select the Freehand option from the pop-up menu. Your cursor will turn into a small pencil icon.
2. Draw a squiggly line within the grid and observe the solarized effect. Different "scribbled" lines are described as different tonal maps. Interesting and posterized color schemes can be developed in this way.



Sample of Freehand curve.

3. Use the Reset button to clear the current curve and try again until you are pleased with the results.
4. Click OK to apply the effect.
5. Save the file as "Wild Boy.RIF" into your **Work in Progress** folder and close.

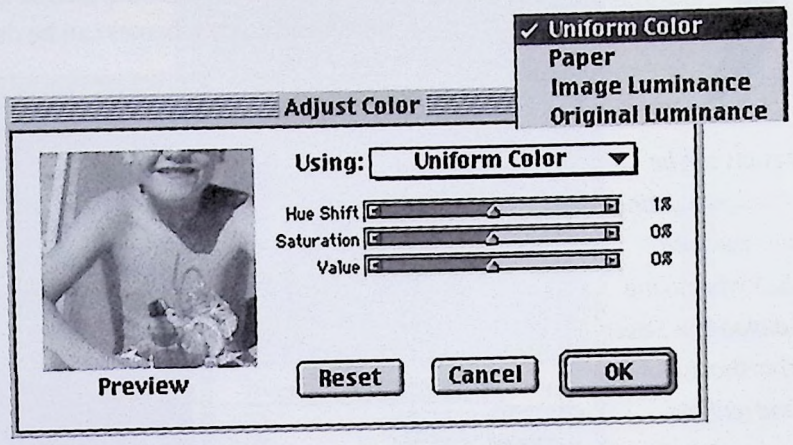
Adjust Colors

Special tonal effects can be created by using the Adjust Colors command. The color can be shifted in terms of its hue, saturation, and value; the sliders control the amount of change. A Using pop-up menu offers options determining where and how much to adjust the colors. Pixels assigned with higher luminances, whether from paper texture, image, or clone source luminance, receive more of an adjustment.

Selected areas receive the adjusted color; if no area is selected, the adjustment is global. The effect can also be applied to a selected layer. The color adjustment can be applied through an existing mask to progressively adjust the tones. Masked areas (black) receive no adjustment; unmasked (white) receive the adjustment.

Use the Adjust Colors Command

1. Open the **Beach Boy.TIF** file from the **SF-Painter** folder.
2. In the Paper palette, select Handmade Paper.
3. Select Effects>Tonal Controls>Adjust Colors.



4. Set the Using pop-up menu to Paper. Next, change the Hue Shift to -24, Saturation to 9%, and the Value slider to -62%.
5. Switch the Using pop-out menu to Uniform Color and Image Luminance. Notice how the color adjustment is different for each choice.
6. When you're finished observing the Adjust Color dialog box, click Cancel to exit.

The keyboard shortcut to Adjust Colors is Command/Control-Shift-A.

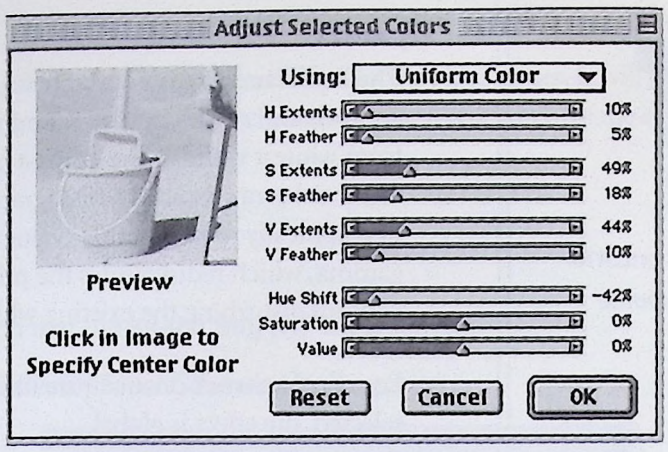
Adjust Selected Colors

Adjust Selected Color works similar to the Adjust Colors effect however it works only on a specified range of colors within an image. The Extents sliders determine the extent of the HSV color space around the selected center color. The lower the "extents" are, the more specific the color choice. The higher the extents range, the more inclusive the selection.

Adjust Selected Colors

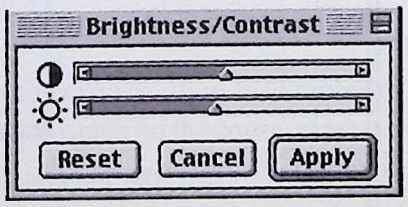
1. Continue in the open document.
2. Choose Effects>Tonal Controls>Adjust Selected Colors.
3. Move your cursor into the image and click to select the sand pail.
4. Set the top group of sliders as shown in the following image.

This is a useful tool for creating isolated color changes, such as changing a textile's color digitally for a fabric catalog.



Low hue, saturation, and value Extents will effectively isolate a specific colored area.

5. Be certain that the pail is visible in the Preview window. If not, drag it within the window until it is clearly visible.
6. Move the Hue Shift slider to the left and right while watching the colors shift on the pail. Because the extents are so low, only a specific magenta will change colors. Move the Saturation and Value sliders directly below the Hue Shift slider to see how they affect the color of the pail.
7. Click the Reset button.
8. Raise the Hue, Saturation and Value Extents sliders. Notice how more of the image is affected by the hue shift.
9. Cancel to exit the dialog box.
10. Choose Effects>Tonal Controls>Brightness/Contrast.



The keyboard shortcut for Brightness/Contrast is Command/Control-Shift-B.

11. Adjust the sliders to improve the image. Click the Apply button.
12. With the Magic Wand tool, select the sand in the foreground. In the Control palette, set the tolerance to 5 and the feather to 10. (Don't panic if part of the boy's knee and foot gets selected. If this were critical, we would mask it. But for this exercise it is fine.)
13. Return to the Brightness/Contrast dialog box and adjust the Brightness slider to the left, darkening the selected sand. Because the feather was set fairly high, the darkening appears gradually over the sand and the boy's skin.
14. Click Apply and exit the dialog box. After inspecting the effect, close the file.

The keyboard shortcut for Equalize is Command/Control-E.

Posterize is a good tool to use when combining a painted background with photographic elements. Posterize the photographic elements to "reduce" them to the tonal range of painted brushwork.

Gamma affects only midtones — it doesn't change the black and white points.

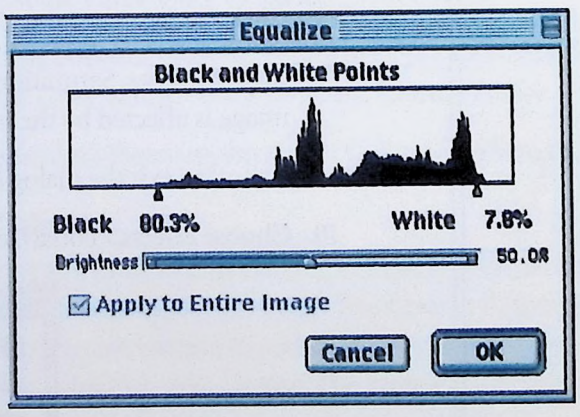
Equalize

The Equalize effect is a versatile tonal control command that can be used to improve contrast and redistribute tonal information accurately over an entire range of values from whitest white to the deepest black a picture can hold. The graphic illustration of this tonal array is called a histogram. (Histograms are used throughout the industry to graphically represent this "value spread.") The Equalize command also sets the gamma, which redistributes the middle values in an image (darkens or lightens) without disturbing the existing white and black points.

Equalize can work on an entire image, a selected area, or a layer. If no specific area is selected, the effect is global.

Use Equalize

1. Open the **Beach Boy.TIF** file from the **SF-Painter** folder.
2. Choose Effects>Tonal Controls>Equalize. Your picture will change without manipulating anything in the dialog box. When you display this dialog box, Painter automatically sets the black and white points of the active picture, selection, or layer.



The "mountain range" represents the distribution of the tones in the image. Shadow values are to the left, highlights are on the right.

3. Drag the black triangle toward the middle slightly. This tells Painter that every value to the left of the triangle should be represented as black.
4. Drag the white triangle toward the middle slightly. This tells Painter that every value to the right of the triangle should be represented as white.
5. Adjust the Brightness slider to change the picture's gamma. Try 42%. Moving the slider to the right makes the image darker, moving it to the left decreases the gamma, making the image lighter.
6. Click OK to apply, then exit the dialog box.
7. Leave your picture open for the next exercise.

Negative

The Negative effect completely inverts the selected pixel values. It will invert all the colors in your image if there is no selected area, or it will work on the selected layer.

Use Negative

1. Be certain that the **Beach Boy .TIF** file is active.
2. Choose Effects>Tonal Control>Negative.

Positive and Negative of the Beach Boy.

3. Choose Edit>Undo. Leave your picture open for the next exercise.

The Negative effect is great for quickly inverting scans of negatives to positive imagery.

Posterize

Posterizing an image is a traditional photographic silkscreen effect that breaks up an image into a specified number of levels based on lightness and darkness. For instance, all the highest values become compressed into one level, all the values representing middle tones get compressed into another level, and the shadowed and darker values are rendered as another. Each level is then printed with one color. The resulting image looks very much like a poster, with broad flat areas of colors and clearly defined transitions between tonal areas.

The Posterize command allows you to adjust the number of levels. Lower levels create more radical effects. Posterize works on the entire image, a selection, or a layer. Posterizing using a specific color set is also an effect. We will use it after the next exercise.

Use Posterize

1. Be certain that the **Beach Boy.TIF** file is active.
2. Choose Effects>Tonal Control>Posterize.
3. Set the Levels to 9. Observe the results in the Preview window.
4. Try other level settings to experiment with this effect. Then set it at 5 levels and click OK to apply the effect and exit the dialog box.

The keyboard shortcut to access the Brush is "B."

The keyboard shortcut to build a new Brush is Command/Control-B.

The keyboard shortcut for the Brush palette is Command/Control-2.

The keyboard shortcut for the Control palette is Command/Control-5.

5. Save the file as "Posterized Beach Boy.RIF" into your **Work in Progress** folder and close.

Photo Brushes

The Photo Brushes offer an intuitive approach to changing an image's tonal values. Because they are brushes, all the rules governing brushes apply, as well as all the controls regarding brush size and configuration.

Use Photo Brushes

1. Open the **Skaters.TIF** image from the **SF-Painter** folder.
2. Select the Brush tool from the Tool palette. Be certain that your Control palette is on the screen.
3. Select the Photo Brush icon (the small camera).
4. From the Variant pop-up menu, select Burn. This darkens whatever area you drag over with your cursor.
5. Using the default brush size and opacity, lightly drag over the girl's leg and arm, (which are too bright.) Drag over both their skates (more emphatically) to darken.
6. Change the brush size in the Control palette to 70 and darken the picture edges.
7. Select the Dodge variant and set the Brush size to 6 and Opacity to 5%.
8. Drag over the guy's face and helmet to lighten slightly.
9. Select the Saturation Add variant. Set the Brush size to 30 and Opacity to 20%.
10. Drag over the guy's jacket and shorts to increase the brilliance of the colors. Do the same for the girl's clothes.
11. Select the Sharpen variant and leave the controls set to their defaults.

"Edge burning" is an old photographic technique which darkens the photo's edges, forcing the viewer's eye to the subject.

Use these tools on a low opacity and gradually build the effect with repeated strokes. This will give you a much more natural looking effect.

12. Zoom in to see their faces clearly. Sharpen their faces by dragging over them lightly. Don't over sharpen.
13. Save the file as "Improved Skaters.RIF" into your **Work in Progress** folder. Leave it open for the next exercise.

Improved Skaters.RIF.

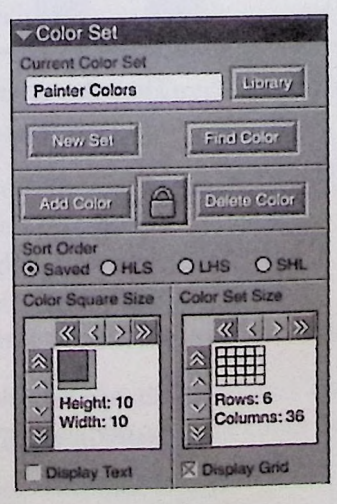
Color Sets

Painter uses Color sets to organize groups of colors. The program ships with 42 color sets, 39 of which are stored on the Installer CD-ROM. These sets include Candy color, flesh tones, and other useful selections. In addition to the default Painter color set, there are two important sets located in the Content Sampler folder (inside Painter's main folder). These are the Pantone Color set and a Spectrum of Oil color set.

Use Color Sets

1. Be certain that the **Improved Skaters.RIF** file is active.
2. Choose Window>Show Color Set. The default Painter color set will appear on your screen. Position it on the bottom left of the screen.
3. On the Art Materials palette, locate the Color Set drawer and open it.

The keyboard shortcut to display the Color Set dialog box is Command/Control-6.



Custom Color Sets

You can build your own Color sets. Colors can be arranged in a variety of ways, you can specify the number of rows and columns, the size of color the swatches, and you can base posterization on a specific color set. You can alter the Color set until it is exactly the way want it.

Any time you wish to reload a default brush set, paper texture, color set, gradation, pattern, or weave, click the Load Library button and navigate to the main Painter folder. They will be loose in the main Painter folder — never in the Extra Arts Material folder. Painter sets it up this way to make it easy to find the default set.

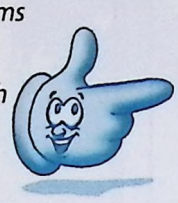
Create a New Color Set

1. To load another set of colors, click on the Library button and navigate to the main Painter folder and select Content Sampler>Color Sets. Choose Spectrum of Oils, then click Open. Notice that this set is now displayed in the Color Set palette.
2. To reload the Painter default colors, click on the Library button and navigate to the main Painter folder again. Locate and open "Painter colors" (Macintosh) or "Painter.PCS" (Windows). Select it and click Open. The default Color set will reappear in the Color palette.
3. Click on the New Set button located just beneath the name of the current color set on the Art Materials: Color Set palette. The current color set disappears and is replaced with a small title bar called "Color Set." It's easy to miss. Locate it and place it in a prominent spot near the Skaters image.
4. Click the Lock icon in the middle of the Color Set dialog box to unlock the set.
5. Select the Eyedropper tool and move your cursor over the picture. Click on the yellow jacket.
6. Click the Add Color button. Notice that the yellow appears in the Color Set.
7. Continue sampling (clicking) and adding colors to your set. Sample about 16 different colors.

The color set is stretched out horizontally. The next steps will adjust the palette configuration.

8. Toward the bottom of the Color Set dialog box, examine the two controls: Color Square Size and Color Set Size. By clicking on the Arrow keys, you can control the layout of the palette and the size of the color chips. Try clicking on the double arrow box in the Horizontal Control>Color Set Size to change the palette to a vertical strip of color chips.
9. Change the color square size by clicking on the arrows corresponding to the desired size.

Don't fall into the trap of naming items nonspecific names, such as "cool colors" and "set 1". You will never remember what they are called. Name them with descriptive phrases that will help you recall them.



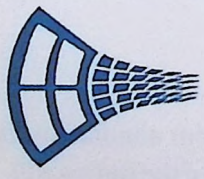
10. To save this set for later use, click the Library button. You will be prompted to save. Click the Save button.
11. Navigate to the Content Sampler folder and open the Color Sets folder. We will save our new set in here along with the other color sets.
12. In the text field, name this color set "Skaters Colors" and click Save. Leave this file open for later use.

Posterize using a Color Set

1. Open the **Beach Boy.TIF** file from the **SF-Painter** folder.
2. Choose Effects>Tonal Control>Posterize.
3. Set the levels to 16.
4. Choose Effects>Tonal Controls>Posterize Using Color Set. It automatically bases the posterization on your color set.
5. Save the file as "Color Set Beach Boy.RIF" into your **Work in Progress** folder and close the file.

Annotations

One of the advantages of color sets is the annotation feature. It uses color names as labels for the colors in your image. These labels are made up of text that points to a particular color in your image. You have the option to hide or show labels.



If no colors are visible when you navigate to the Content Sampler folder, select All Files from the File Type drop-down menu.

Annotations float in a separate layer above the canvas, (similar to an "invisible" as used in other graphics applications). An image with layers can have annotations. When a layer is moved, its annotations go with it. As long as the annotated image is saved as a RIFF file, its annotations are available. If a file is re-rendered at a larger size with increased resolution, the annotations are also re-rendered.

Painter's annotation feature allows for extremely accurate color-matching for printing. The Annotations feature quickly shows its worth each time a job is sent for output. Accompanying a color proof, it assures a quantifiable record of the colors expected from your service provider.

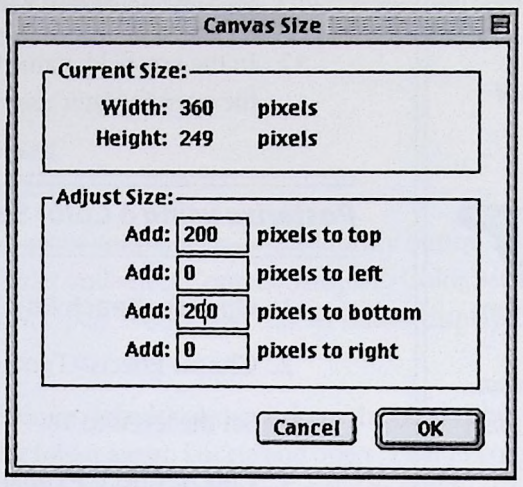
Use Annotations

1. Make certain that the **Improved Skaters.RIF** file is open.
2. Click on the Library button and navigate to the Content Sampler folder in the main Painter folder. Open it, then open the Color Sets folder within it.
3. Select the Pantone Colors and click Open.

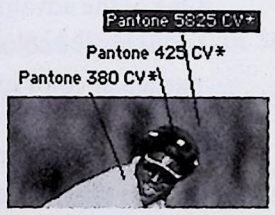
Annotations only work properly with colors that have a name, such as Pantone colors. Otherwise, when you annotate, you just get an asterisk (*), not a name.

Annotations that hang outside the canvas will not print. Some Pantone names are too long — be certain to leave enough room for even the longest name.

4. From the Canvas menu, choose Canvas Size. Add 200 pixels at the top and bottom to accommodate the annotations.
5. From the Canvas menu, choose Annotations>Annotate.



6. A small palette with a "Done" button appears on the screen. The annotation process can begin now.
7. Click on a color for which you wish to have a Pantone label and drag out to the additional canvas. The Annotation tag will appear centered under your cursor position.



8. Continue annotating colors in the image. Be certain that your annotations fall completely within the white area because only "live" areas of the canvas will print. When you have a fair sampling of the entire range of colors present, click the Done button.
9. To hide these annotations, select Canvas>Annotations>Hide Annotations.
10. Save and close the picture.

Chapter 12

Animation

Chapter Objective:

To gain a solid understanding of Painter's animation features. To learn to create animations from scratch or by compositing existing imagery with still photography or video clips. To learn to create, edit, clone, and composite movies. In Chapter 12, you will:

- Learn to create your own animations using natural media tools.
- Know how to open and modify existing movies.
- Gain an understanding of animation and compositing techniques.
- Learn to work with video.
- Learn to make a movie using layers.
- Understand how to use the Frame Stack dialog box.
- Become familiar with timing considerations.
- Understand how to create an animated GIF for the World Wide Web.
- Learn how to export movies in QuickTime or AVI formats.

Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- **(E) Arrive Alive Public Service Announcement**
- (F) Sports Web Page

Animation

With Painter you can create new movies and animations. Unlike other QuickTime and AVI applications, Painter offers several unique ways to modify existing film or video clips. You can paint directly into video frames, and clone and composite frames from one video to another. You can work with existing clips, or start an animation from a blank frame. Your finished movies can be saved as QuickTime, AVI, or animated GIF files for the Web.

The controls on the Frame Stacks palette are similar to those on a VCR.

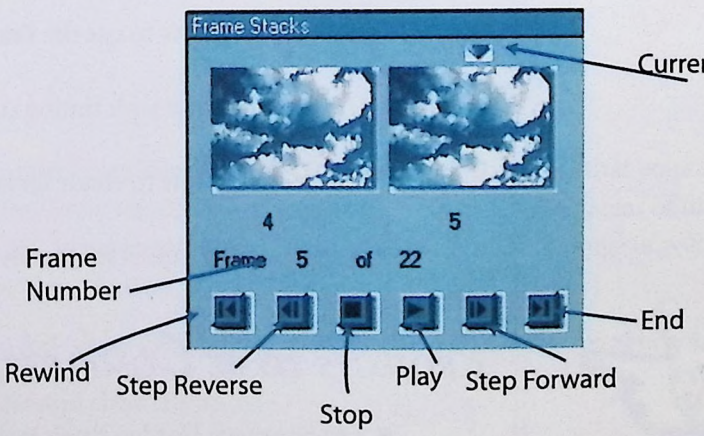
Before we begin creating animations, it is important to learn a bit about file size. Video and animation can produce huge files. One 640 × 480 frame at a 24-bit color depth is 1.2 MB. Ten frames is 12 MB. At this size, a 30-second movie, played 12 frames per second, would take 400 MB of available storage to save.

To calculate the disk space required for a frame stack, multiply the frame width × frame height × bytes per pixel × the number of frames to get the bytes required. Divide by 1,024 to convert to kilobytes. 24-bit color with an 8-bit mask = 4 bytes per pixel.

We will work at half the above frame size and create short (approximately 10 frames) movies to maintain control over storage.

The underlying element of Painter's animation feature is called the Frame Stack. Whether you are working with imported video or building a new animation, the tools you will use are available on the Frame Stacks palette.

The number of layers of Onion Skin requested in the new Frame Stacks dialog box determines the number of Preview thumbnails displayed. AVI and QuickTime movies display two thumbnails by default when opened.

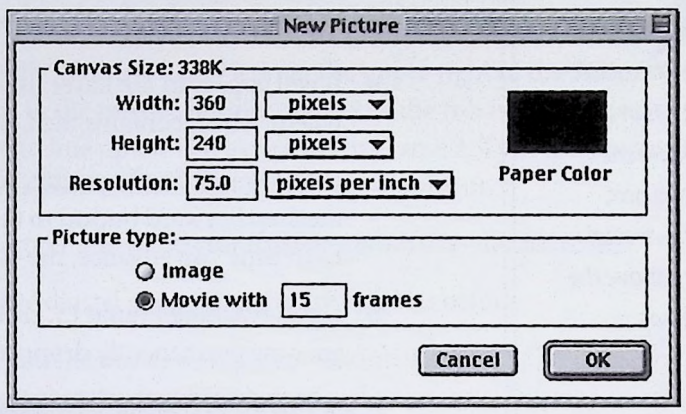


In addition to the Frame Stacks palette, there are other controls available from the Movie menu. We will address these features later in this chapter.

Examine the Interface

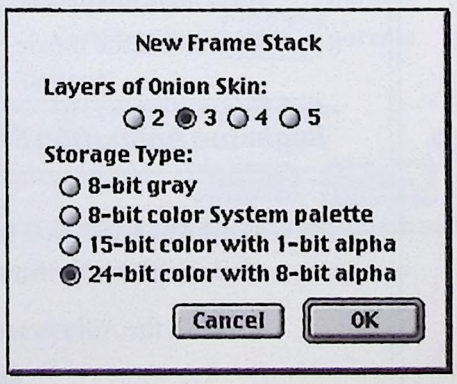
1. Open the **Bimini.RIF** and **Little Butter Fish.RIF** files from the **SF-Painter** folder.

2. Select File>New. Set the width to 360 pixels and the height to 240 at 75 ppi. Select black as the paper color. For Picture Type, choose the Movie radio button. Enter 15 frames, and then click OK to exit.

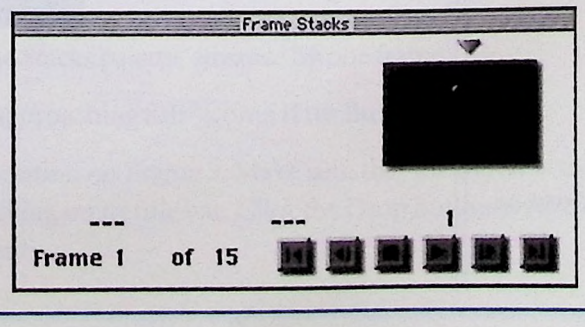


3. You are prompted to name your movie and save it. Save it into your **Work in Progress** folder and name it "Swimming Fish.MOV". Click the Save button.

4. You will be prompted to choose the number of Onion Skin layers and the Storage Type. Choose 3 layers of Onion Skin and 24-bit color with an 8-bit alpha channel. Click OK.



5. The Frame Stacks palette will appear with a blank image window for creating the movie. Expect Frame 1 to be black.



The shortcut key commands for the Frame Stacks palette are:

Rewind = Home key

Step Reverse = Page Down key

Stop = Command-(-) or Control-(-)

Play = Command-Shift-P or Control-Shift-P

Step Forward = Page Up key

Fast Forward = End key

The number of Onion Skin layers determines the number of preview thumbnails in the Frame Stacks palette.

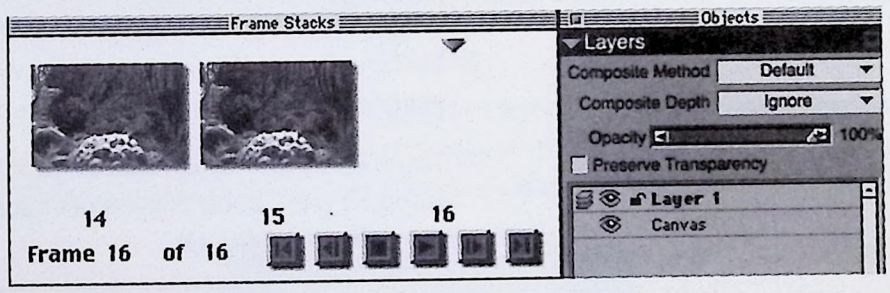
Hint for Step 3: It is in the destination document when a thin-lined box, representing the moved image, appears above the destination canvas.

Painter automatically saves the movie as you create it. The Save As command is used for exporting a movie to another application.

All of Painter's tools, brushes, and effects work on movie frames.

Prepare the Background

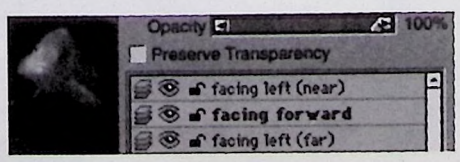
1. Make certain that the **Bimini.RIF** file is active.
2. Select>All.
3. With the Adjuster tool, drag the reef picture into the movie image window named **Swimming Fish.MOV**. (If you have problems dragging, simply Cut and Paste: Choose Select>All, Edit>Copy, make the movie window the active document and choose Edit>Paste.)
4. It will appear in the Layer list as a layer. (Command/Control-4 opens the Object palette which contains the Layer list.) Do not drop the layer.
5. In the Frame Stacks palette, advance the movie one frame at a time by clicking the Step Forward button to the last frame (the button next to the Play button). Each time you advance, the floating background layer is carried forward.
6. Upon reaching Frame 15, click the Drop button on the Layer palette. The layers are now permanently dropped to the background of the movie.



7. Rewind the movie to Frame 1. Leave it open. DO NOT use File>Save.

Begin the Animation Sequence

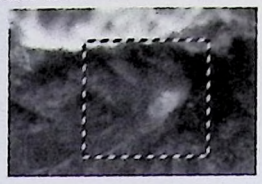
1. Make certain that the **Little Butter Fish.RIF** file is active, and that the layer list is visible on the screen.
2. With the Adjuster tool, select the fish that is facing forward.



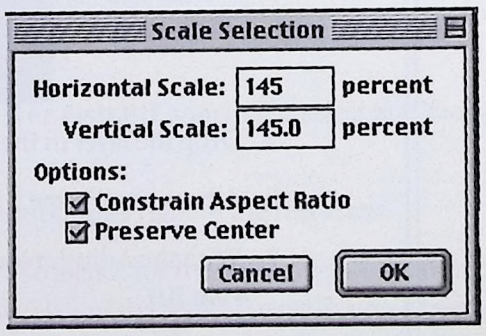
Leave the Tracing Paper turned off — it is good to use it only to check positioning. The thumbnails in the Frame Stacks palette offer a good alternate for judging placement of moving elements.

The Storage Type selection in the New Frame Stacks dialog box has no bearing on the editing tools (selection and painting) while creating each frame. If you want full capabilities for further editing, it is best to save your file as a 24-bit storage type — at least until the final edit.

3. Drag it into the movie window and place it so that it is centered. Click on the movie's title bar to be certain that it is the active document.



4. Click the Drop button on the Layer list and advance to Frame 2 in the Frame Stacks palette by clicking the Step Forward button.
5. Click on the Tracing Paper icon in the upper right of the **Swimming Fish.MOV** window. In the movie window, a ghost of the fish from Frame 1 appears. This will help to line up the fish's position in Frame 2. Turn the Tracing Paper off again and leave it off, except for critical alignment.
6. Make certain that the **Little Butter Fish.RIF** is the active file.
7. With the Adjuster tool, select the same fish as before.
8. Drag it into the movie's Frame 2. Position it near the fish's position in Frame 1. Be certain that the movie is the active document by clicking on its title bar.
9. To make the fish appear to be swimming toward the viewer, scale it by choosing Effects>Orientation>Scale. Make it slightly larger — about 145%, and click OK to accept the scale.



10. In the Layer palette, drop the layer.
11. Keep the document open.

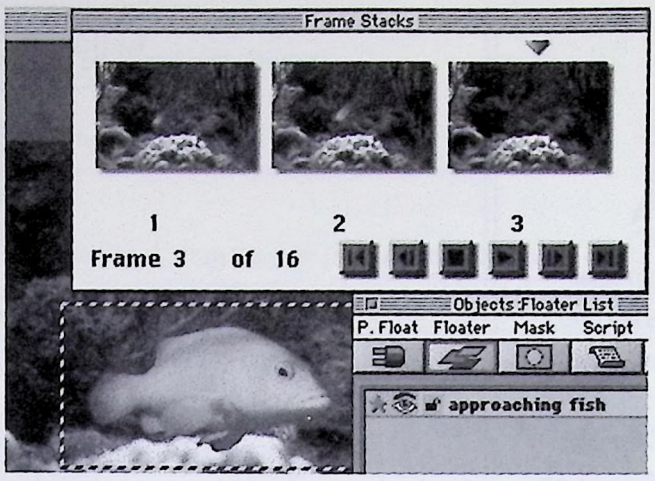
Create Movement

1. In the Frame Stacks palette, advance by one frame.
2. Select the "approaching fish" from **Little Butter Fish.RIF**.
3. Place it in position on Frame 3. Make sure that the movie is the active document by clicking on its title bar. Click the Drop button on the layer list to accept the placement.

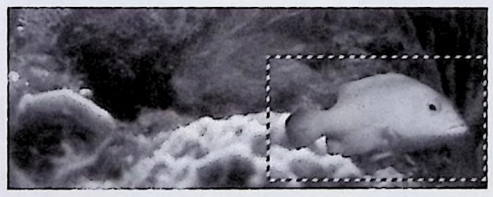
If you are having trouble moving a layer, check two things:

Be certain that it is the active layer in the layer list.

Be certain that it is unlocked. (Click on its Lock icon in the layer list.)



4. In the Frame Stacks palette, advance to Frame 4.
5. With the Adjuster tool, select the same "approaching fish" from the **Little Butter Fish.RIF** picture.
6. With the Adjuster tool, drag it into the movie's Frame 4. Position it near the fish's position in Frame 3; only this time, move it toward the right so that it appears to be swimming toward the picture's edge. (Check the position with the Tracing Paper or with the Thumbnails.)



7. Drop the layer in the Layer list.
8. Advance to Frame 5 in the Frame Stacks palette.
9. With the Adjuster tool, reselect the "approaching fish" from **Little Butter Fish.RIF**.
10. Drag the fish into the movie's Frame 5. Position it so that half its body is out of the frame.

11. Drop the layer and advance to Frame 6.
12. In the **Little Butter Fish.RIF** source file, select the "facing left far" fish from the Layer palette.

Hint for Steps 7, 11, and all other instructions requiring a "dropped layer" command:

Be certain to drop the fish layer — otherwise it will be carried forward to the following frames.

Rotate floating fish layers to vary the "swim path."

13. Drag the fish into the movie's Frame 6 (not into the Frame Stacks palette). Position it so that the front half of its body is in the top-right part of the background.

14. Drop the layer and advance to the next frame.
15. Keep the document open.

Repeat Steps to Create Movement

Perform this sequence for Frames 7- 9 to finish the segment of frames using the "facing left far" fish:

- Get the element (fish).
- Drag it into the movie background and position it correctly. (You may wish to use Effects>Orientation Rotate to change the angle of the fish's movement.)
- Drop the layer in the Layer List.
- Advance one frame.

Frames can also be cleared of their contents — not eliminated entirely. Choose Movie>Delete Frames.

1. In the **Little Butter Fish.RIF** source file, select the "facing left near" fish from the Layer palette.
2. Place it toward the bottom-right of the reef scene.
3. Repeat the above sequence for the remainder of the frames (11–14) to exit the fish from the lower left of the frame. Leave Frame 15 with no fish.
4. Click the Rewind Button. Click the Play button to watch your first animation.

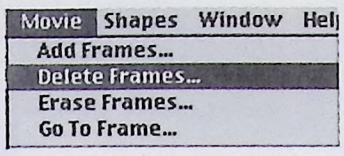
Editing the Frame Stacks

Occasionally it is necessary to edit the animation sequence by deleting or inserting frames.

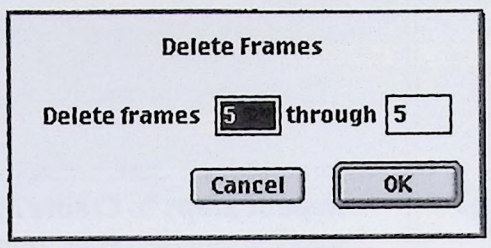
Delete a Frame

1. Select the movie document.
2. In the Frame Stacks palette, advance to the "bad" frame.

3. Select Movie>Delete Frames…



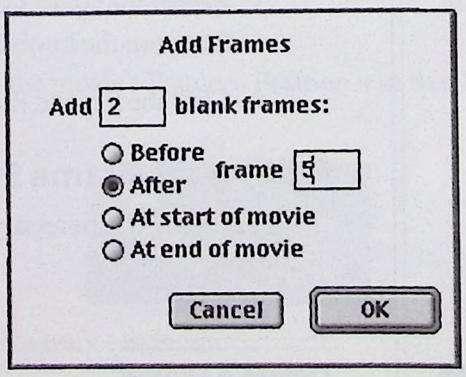
4. Specify which frame or frames to delete.



5. Click Cancel. (This is to show you that the option exists if you need it.)
6. Keep the document open.

Insert a Frame

1. Copy the background you wish to use in the new frame to the clipboard of the file **Bimini.RIF**.
2. In the Frame Stacks palette, advance frame-by-frame to locate the insertion point for the new frame or frames. (Frame 5 needs 2 frames following it to enable the fish to exit the scene completely.)
3. Select Movie>Add Frames.
4. A dialog box prompts you to specify where and how many to add. Click OK. Add 2 blank frames after Frame 5.



5. Advance to the new blank frame — the new Frame 6.
6. Choose Edit>Paste to give it a background.
7. Click the Drop button in the layer list.

The movie exercises in this chapter are designed to be small in size to run on most computers. If you have a powerful computer, create more frames and try larger file sizes. The movies will run much more smoothly.

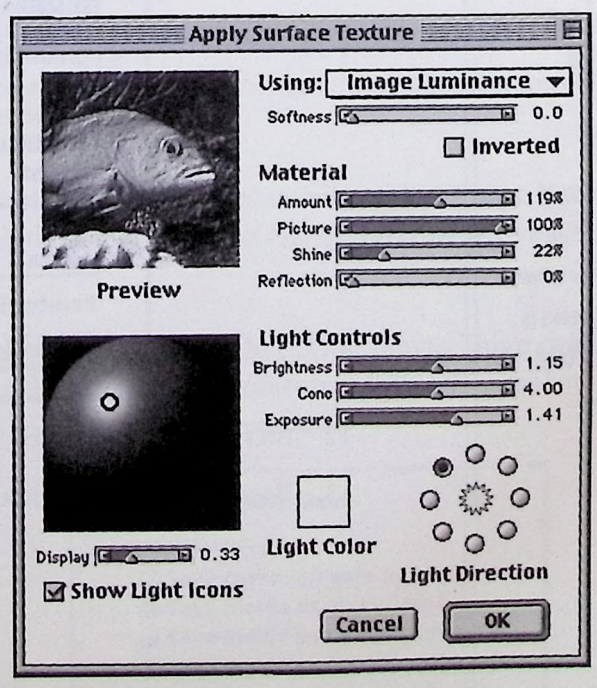
8. Drag another copy of "approaching fish" into the frame; position it so that it exits the frame more completely than in Frame 5.
9. Drop the layer and advance to the next new frame. Repeat the sequence for Frame 7. (Make the fish almost entirely out of the frame.)
10. Rewind and play. Notice that the sequence is less choppy in that section.

Movies and Scripts

A script is a recorded sequence of actions which can be played back. This feature is a serious time-saver in the creation of movies. Instead of creating and applying the effect frame-by-frame, a script is recorded and played-back to the whole frame stack.

Apply a Script to a Movie

1. Select the **Bimini.RIF** file to use to record the script.
2. On the Objects palette, select the Scripts subpalette.
3. Choose Record Script from the Script pop-out menu, or click the Record button.
4. From the Effects menu, choose Tonal Control>Equalize. In the Equalize dialog box, click OK.
5. Select Effects>Surface Control>Apply Surface Texture. Set it up using Image Luminance at these settings:

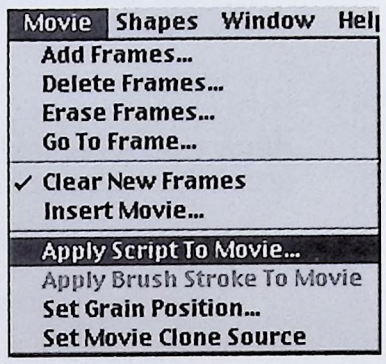


6. Click OK to apply the surface texture and exit the dialog box.

There is no Undo for applying scripts to a movie. Once it is applied to a movie, there is no going back. Make a clean backup copy first.

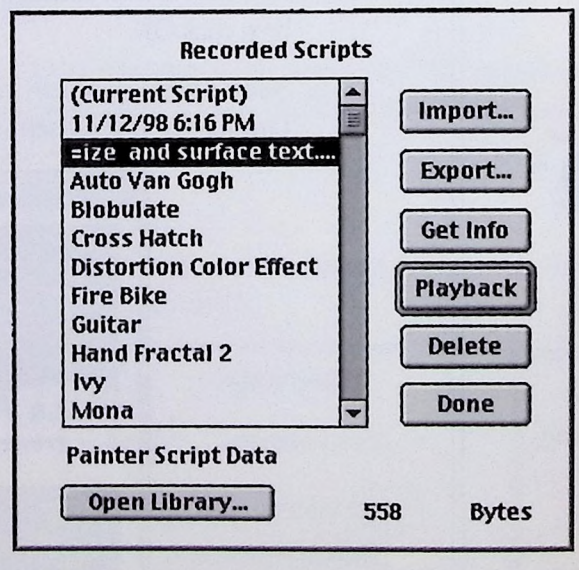
Depending on the frame size, movie length, complexity of the script, and computing power of your machine, it may take a few moments or a few hours to apply a script to your movie. The script in the exercise will take a moment.

7. In the Scripts palette, click the Stop button, or choose Stop Recording from the Script pop-out menu.
8. Save the script as a name which is descriptive of exactly what it does, thus Equalize would be "=lize". Surface texture:Image Luminance would be "Surf_im_lum." Click OK.
9. Select **Swimming Fish.MOV** to apply a script.
10. From the Movie menu, select Apply Script To Movie. A dialog box appears that lists the scripts in the current library.



11. Locate the script you just created and double-click on its name. Painter will play it back on the selected movie.

When you advance from one frame to the next, Painter automatically saves your work. The bad news is that it can not be undone. Edit>Undo is inactive.



12. After the script is applied, play the movie, and then close.
13. Close all other files without saving changes.

The actual Broadcast Video Standard in the United States is 29.97 fps.

Timing Considerations

Frame rate (the number of frames per second displayed, or fps) is of primary importance when you are saving your animation. This frame rate can be specified when saving your movie as a QuickTime or AVI file.

If you are going to be showing your animation solely on a computer monitor, an fps of 8, 10, or 12 is perfectly acceptable.

NTSC video requires a frame rate of at least 15 for decent quality output. If you are not so concerned with quality, try 10 fps. The video standard compliance in the United States is 30 fps. PAL (European Standard) is shown at a frame rate of 25 fps. Film is shown at a frame rate of 24 fps.

These rates will allow for smooth, continuous display of filmed subjects or those shot on video. Animated cartoons are far less detailed than live-action subjects. This difference allows for the reduction in the frame speed allowable for animated cartoons. When creating an animation, you must consider how many frames per second will render smooth, controllable action. You cannot display different parts of your movie at different rates. This type of editing is normally done in a video/film editing program.

Saving and Exporting Movies

Painter offers several different options for saving and exporting movies. These will vary according to the platform used in the creation of the movie: Macintosh or Windows.

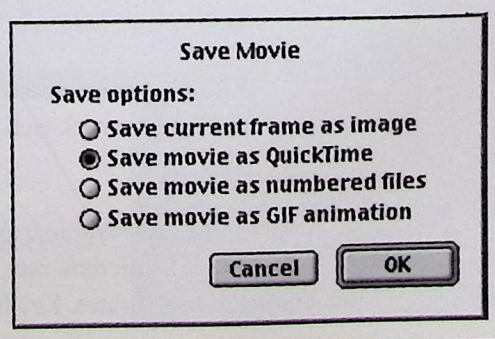
Painter is an animation creation tool. Movies can be exported to editing programs such as Adobe Premiere.

Exporting Movies using a Macintosh (QuickTime)

When you select Save As at the end of a movie's creation, Painter offers several choices.

The first is to save the current frame as an independent image. Normal navigation and saving conventions apply; it works exactly the same as saving any image created on a Macintosh.

The second is to save the movie as a QuickTime movie. This movie format is seemingly universal on the Macintosh. It comes bundled with several other applications such as browsers and image-editing programs.

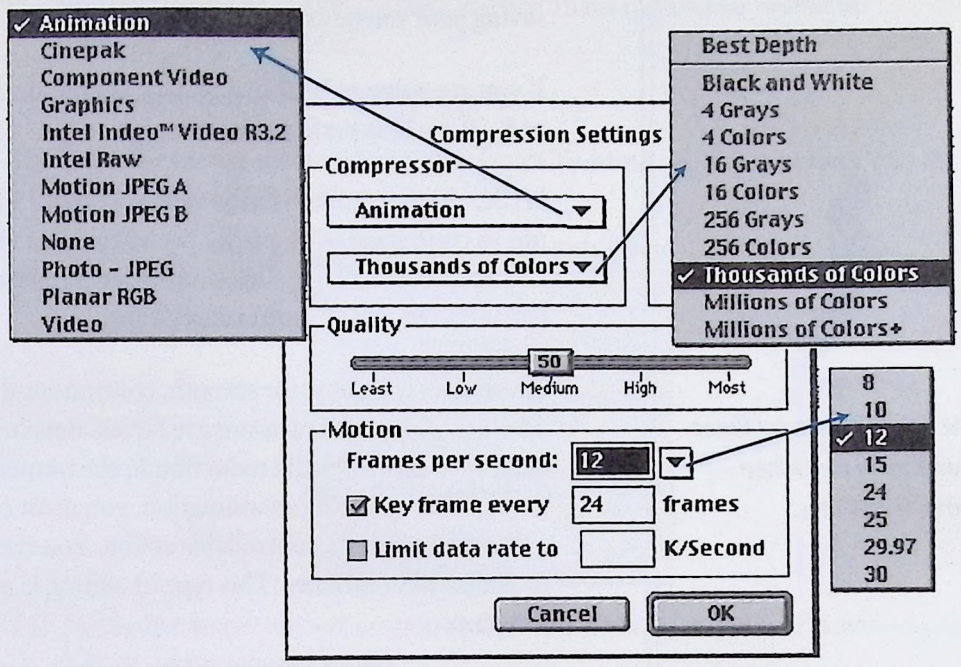


Set the Quality slider to high for most animations.

Cinepak takes an incredibly long time to compress. If you're trying to save in a hurry, choose another type of compression mode.

Animated GIFS are dependent on the browser to display properly. The latest releases of Netscape and Internet Explorer support GIF animations.

When you click OK to exit the Save Movie dialog box after choosing QuickTime as the Save option, you are presented with another dialog box. Here, you can set the QuickTime parameters for your specific output requirements.



The Compressor pop-up menu offers various compression options. A brief summary of each is listed below:

Animation works best with areas of continuous tone. With the Quality slider set to Most, it compresses without a loss of quality.

Cinepak is the preferred format for CD-ROM delivery and for transferring movies across the Internet. It compresses down to small sizes, yet creates acceptable images for screen-only display.

Graphics are limited to 256 colors. They can be compressed down to be very small, but do not play well at higher speeds.

None, or no compression at all. A lot of computing power is needed to play a movie saved with this option.

Photo-JPEG is the international standard for image compression. It allows for high compression, but does not play well at higher speeds.

Video is designed for recording and playing back videos at a high rate of speed. It does not work well with animations containing large areas of continuous tone.

Other options available from this dialog box include: Frames per second, Key frame setting, and Limit data rate. The Frames per second pop-out menu offers choices for common frame rates. Key frames are frames which are totally redrawn. Non-key

You may have additional compressors available on your system.

When creating for the Web, consider:

- *limiting file size for fast downloads*
- *color choices (fewer colors load faster)*
- *the file dimensions (small files load quickly)*
- *number of frames (fewer is faster)*

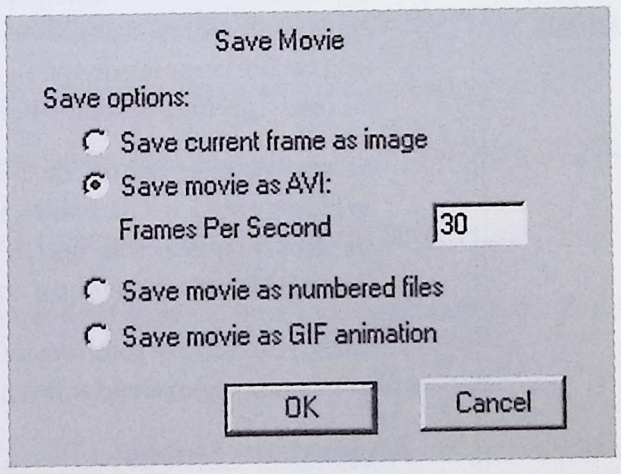
frames only redraw changed elements. The Limit data rate option is available only with certain compressor options. When enabled, it will override the Quality setting if necessary and keep the animation within the set limit.

The next popular save option is GIF Animation. This format will save your movie as an efficient stack of GIF frames, suitable for displaying on the World Wide Web. You are already familiar with the GIF options dialog box, and with the subsequent Preview Date option — it is the same for animations.

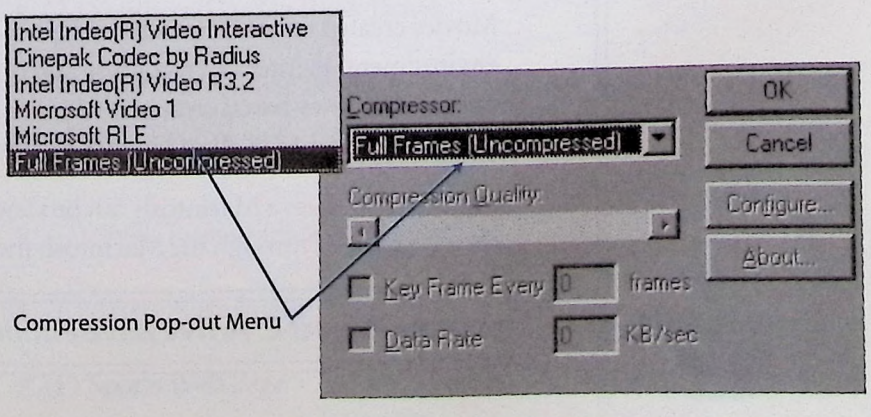
Lastly, you can save your movies as numbered files. When you use this option, the file name must begin or end with a number. For example, "01Sequence" or "Sequence 01." You may click OK to save the movie at the chosen settings.

Exporting a Movie using Windows (AVI Movie)

The available option for exporting movies on the Windows platform is as an AVI movie. When you select File>Save As, a dialog box will appear to prompt you to select an option for saving.



All the options are the same except for one: rather than using QuickTime, Windows supports AVI Movie. You have the option to set the number of frames per second. When you click OK, the standard Save dialog box appears. Upon navigating to the desired location, naming your movie, and clicking Save, you are prompted to choose the type of video compression.



When importing numbered files into Painter running on Windows-based systems, the file type must be supported by Painter and the number of digits in each number must be the same. For instance, a frame stack of 10 frames must begin with 01,02, 03, and so on. A frame stack of 100 must begin with 001, 002, and so on.

The Compressor pop-up menu offers many different compression options. A brief summary of the most popular formats is listed below.

Cinepak: (This option was addressed previously.) The preferred format for CD-ROM delivery and transferring movies across the Internet. It compresses to incredibly small file sizes and yet creates acceptable images for screen-only display.

Intel Indeo Video R3.2: Offers full-motion playback on systems with hardware compression accelerators.

Microsoft Video 1: Created for recording and playing back digitized video at high speed.

Full Frame (uncompressed): No compression at all. A lot of computing power is needed to play a movie saved with this option.

Other options available from this dialog box are: Frames per second, Key frame setting, and Limit data rate. The Frames per second pop-out menu allows for choosing common frame rates. Key frames are frames which are totally redrawn. Non-key frames only redraw changed elements. The Limit data rate option is available only with certain compressor options. When enabled, it will override the Quality setting if necessary, keeping the animation within the set limit.

Another popular save option is GIF Animation. This format will save your movie as an efficient stack of GIF frames, suitable for displaying on the World Wide Web. You are already familiar with the GIF options dialog box, and with the subsequent Preview Date option. It is the same for animations.

Lastly, you can save your movies as numbered files. When you use this option, the file name must begin or end with a number: "01Sequence" or "Sequence 01."

Movie Player is available as a free download on the Apple Web site.

Animation Notes

Painter is an animation creation program. To view animations created on different computer platforms (Macintosh or Windows) you will need an application called "Movie Player" installed on your system.

Movies created on a Windows workstation can be viewed as animations within the Windows environment. Painter can recognize and open .AVI or .FRM movies.

Movies created on a Macintosh can be viewed as animations within the Macintosh environment. Painter can recognize and open QuickTime movies. A Macintosh can open a Windows-based created .FRM movie if PC Exchange has been set to translate a .FRM file as an FSFS file. (There is no way to open an .AVI file.)

Movies created on a Macintosh can be viewed on a Windows workstation as long as they are opened through the Macintosh movie player and re-saved as a .MOV file.

Complete Project E: Arrive Alive Public Service Announcement

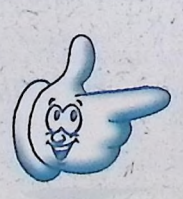
Chapter 13

Web Design

Chapter Objective:

To learn the importance of planning and outlining prior to the creation of Web pages. To understand the differences in colorspaces, and how they affect Web design. To learn about the differences between a JPEG and GIF file, and when each should be used in Web creation. In Chapter 13, you will:

- Gain a basic understanding of how to develop a Web page.
- Become familiar with HTML colors and Web-safe brushes.
- Learn to create a seamless tile for use as a background.
- Develop skill in optimizing JPEG and GIF files for use on the Web.
- Create 3-D buttons and banners using Bevel-World.
- Gain an understanding of how and when to use the Image Slicer.
- Work with the JavaScript Rollover feature.
- Learn to create a client-side image map.
- Learn to create a transparent GIF.



Projects to be Completed:

- (A) Southern Garden Book Jacket
- (B) End Game Movie Poster
- (C) Swim Meet Today Banner
- (D) Shells Restaurant Menu Cover
- (E) Arrive Alive Public Service Announcement
- **(F) Sports Web Page**

Web Design

With the explosion of activity on the Internet, more companies and even "regular" people find it advantageous to have a Web presence. Painter makes it easier than ever to create content for Web pages.

Understanding the Web — and Designing for it

When the internet was first developed, it was the domain of scholars and scientists. There were no graphics, colors, animations, or buttons to click on, only text. The text, with its minimal formatting and code, described the page layout, the letter size and weight, and, most importantly, the ID strings of numbers tagging its location on a Web of computers linked by phone lines — creating a virtual community of labs and universities sharing research and ideas.

Painter may be used to create the contents of your page, however, the application cannot create (in the background) the code necessary to add the functionality of JavaScript Rollovers, Image Slicing, and Client-side Image maps. Accessing these HTML codes is explained later in the chapter.

If you don't know, or just plain hate the idea of learning HTML, there are some great authoring programs available. Some examples include Adobe GoLive and Microsoft FrontPage.

From this rudimentary beginning has grown the Web as we know it — with everyone from the Metropolitan Museum of Art to Auntie Jenny's Homemade Cookies joining in. Still, many of the original constraints plague those who wish to publish on the Web.

The first constraint is speed and file size. Although the phone line is no longer the only way to access the Internet, it is still the most prevalent (and slowest). Often, designers have to juggle between beautiful graphics and file size, and usually size considerations win. Most Web designers set the ceiling on how much a complete page can weigh at 50K. That is incredibly small, but workable with skill.

The second constraint is the page's frame — its structure. Items such as buttons, type, and graphics can't be placed wherever you want — they must fit into the framework of the page.

Furthermore, colors are not determined by the beautiful 16 million colors that appear on most monitors. In Web design, 216 colors have to do the job of millions.

Yet, within these limitations, designers are still able to create innovative, exciting, or subtly beautiful Web pages. The key to this is planning the page and optimizing the graphics specifically for their intended use.

Planning the Page

The first step is to (on paper) draw thumbnails of the desired page. Choose the best thumbnail for balance and functionality relating to your need.

Next, graduate to a "to size" rendition of the page. Specifically list pictures, graphics, background tiles, title banners — all the elements that the page is to contain.

Finally, gather together (in one folder) all the existing elements for the page. As additional elements are created, save them all into this "root" folder.

The color #669966 is a mossy, middle-value green.

It is a good idea to name this main folder "Root" because, when you call your service provider regarding how they want you to upload your site to the server, the Systems Administrator is going to question you about the location of the "Root" folder.

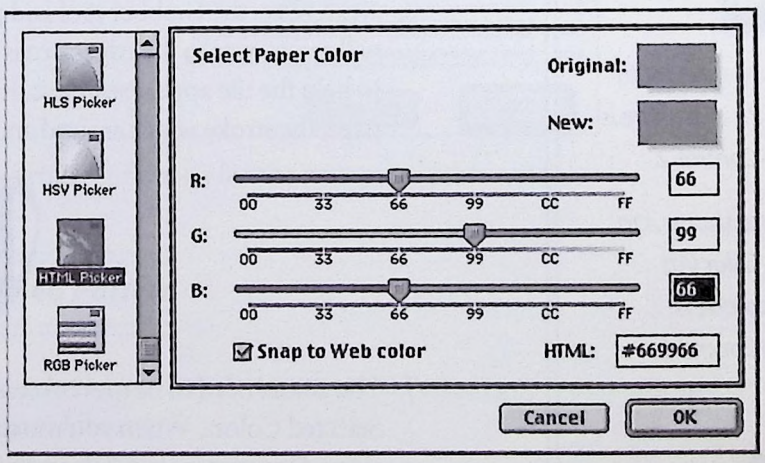
Look at all the colors of the elements. Create a cohesive color scheme based on the colors: background color, text color, link color, visited link color, and Java Rollover color. Make color a unifying element, not just a haphazard choice. Color is much too strong a design element to squander its value. When you're ready, begin developing the page using Painter.

Background Tiles

Instead of a plain, flat background color, textured tiles can be created in Painter which wrap around seamlessly, challenging the eye to detect the pattern. Textures should be "passive" so that they do not interfere with the readability of the text or detract from any other graphics on the page. A background tile should be stored as the smallest GIF file possible and should not exceed 72 pixels in either dimension.

Prepare the Background Tiles

1. Create a new picture 60 × 60 pixels, at 72 ppi. Click on the Paper color chip to access the various color models that are available. Set the color to a clear, middle-value green. Be certain to choose from the HTML Color Picker. Try the settings shown below.



Notice the Hex values 669966 used to identify a color in HTML code. (This illustration is the Macintosh Paper Color Picker. Windows-users will have a different interface.)

2. Click OK to accept the color choice, and then OK to exit the New document dialog.
3. From the Color palette (in the Art Material palette), and with the Dropper tool, (from the main toolbox) choose a shade of green which is slightly different than the paper color and less saturated. Notice the Hex values for the color chosen is displayed in the Control palette. (99CC99 is a good choice. In the Color Set palette, (Window>Show Color Set), it is in the third row down, ninth column from the left.)

The Painter Web Colors — WEB are the same as the default Painter colors except that they come with a HEX-tag — an HTML value assigned to a specific color.

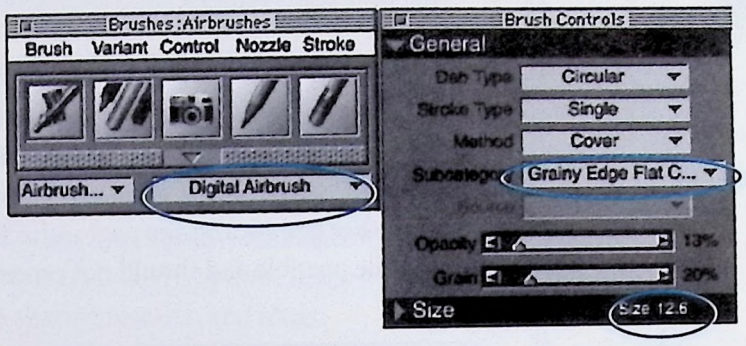
HEX = Hexadecimal

The keyboard shortcut to display the Brush palette is Command/Control-2.

The keyboard shortcut to display the Color (Art Materials) palette is Command/Control-3.

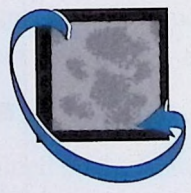
Once you've selected the Web color set, any color you pick from the Color Picker will be a Web-safe color.

4. Display your Brush palette from the Window menu, or double-click on the Brush icon in the main Toolbox.
5. Select the Airbrush, Digital Variant, and set the Method/Subcategory to Grainy Edge Flat Cover. Set the size to approximately 12 pixels.



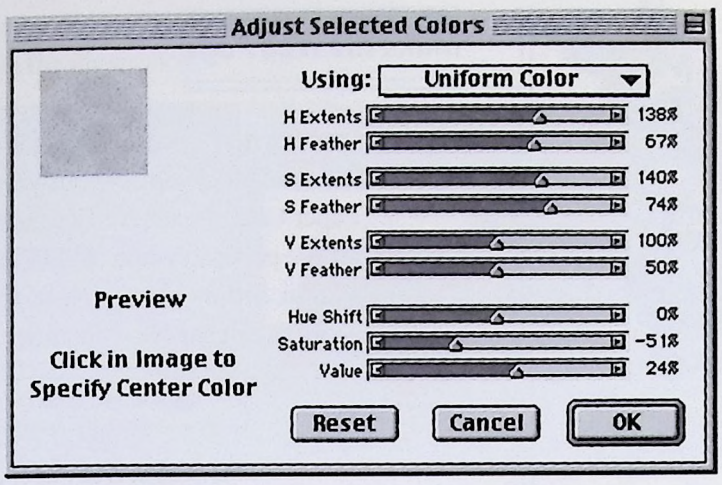
For Web painting, be certain to set the Method/Subcategory to Grainy Edge Flat Cover. This makes the brush Web-friendly.

6. Paint some texture.
7. From the Art Materials palette, on the Pattern drawer, choose Define Pattern from the Pattern pop-out menu. Painter will take note of the pattern.
8. Next, select the Grabber tool and press the Shift key. Drag the stucco pattern — it will move over so the edge-area is in the center. Put some more stucco texture here to help the tile appear seamless. If you paint in the upper-left corner and go off the page, the stroke wraps around and will reappear on the lower-right corner.

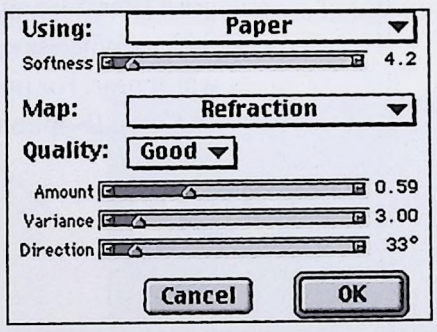


9. The colors need to be more recessive. Choose Effects>Tonal Control>Adjust Selected Colors. When you move your cursor out over the image, it will change into a Dropper icon. Click on the darkest green background color on the image to select the color to be shifted (click in the image — not in the preview box). Set the sliders as indicated in the following image (the Saturation slider is important) and click OK to accept the color change. Exit the dialog box.

The Web-friendly brushes are aliased-edged, one-color brushes that work on a Cover/Flat Cover method. Grainy Edge Flat Cover will show paper texture. Any one-color brush used with this method will be Web-safe.



10. Select Effects>Focus>Glass Distortion. Set the sliders as indicated. Click OK to exit the dialog box and accept the distortion. Experiment with different papers to see which texture provides the best glass distortion. Try Pavement. Click OK.

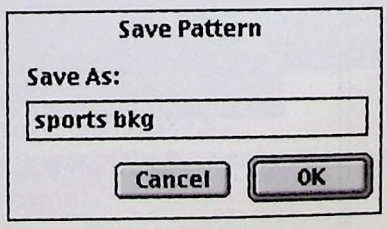


11. Leave your work open for the next part of the exercise.

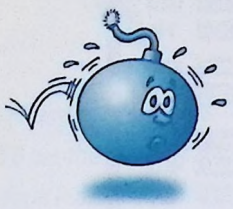
Save a Defined Pattern

It may help you to take a peek at the final page layout at the end of the chapter — also at the end of Project F, which is the finished Web page mock-up.

1. On the Art Materials palette, select the Pattern pop-out menu and choose Add Image to Library.
2. The Save Pattern dialog box will prompt you to name your Pattern. Name it "sports bkg", and click OK.



3. Choose File>Save. When prompted, create a new folder within your **Work in Progress** folder called "Root". Name the tile document "s_tile.RIF" and click Save.



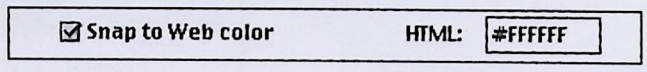
Do not underestimate the problems that will occur if you do not save all the page elements in the Root folder.

Web file names should have no spaces or punctuation. It is a good rule to use lowercase letters. To separate words, use an underscore. Adhere to the "8.3" convention.

The keyboard shortcut to Select All is Command/ Control-A.

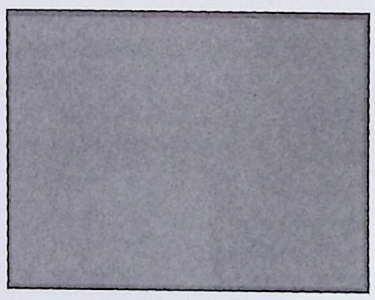
Make the Web Page

1. Create a new document that is 640 × 480 pixels at 72 ppi. This is the file you will use as a "mock-up" of your Web page. Click on the Paper color chip to enter the Paper Color Picker. On a Macintosh, type FF in each of the three text fields, to set the paper to white (#FFFFFF is hex for white.) On a Windows-based workstation, simply choose white. Click OK to exit the Color Picker and click OK again to exit the New document dialog box.



Macintosh Web Paper Color Picker with HTML number field.

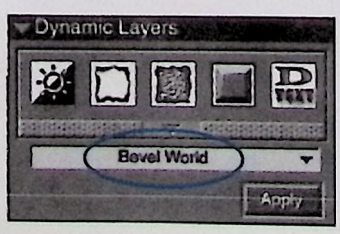
2. Choose Effects>Fill and select the Pattern radio button. Click OK.
3. View this page background to check for visible seams, but don't close it; we will use it later. Save and name the file as "s_page.GIF" into your **Work in Progress** folder. (When saving as a GIF file format, there is an additional dialog box that will appear. For now, simply click OK to accept the default settings. We will address GIF options later in this chapter.)



4. Close the document.

Create the Banner

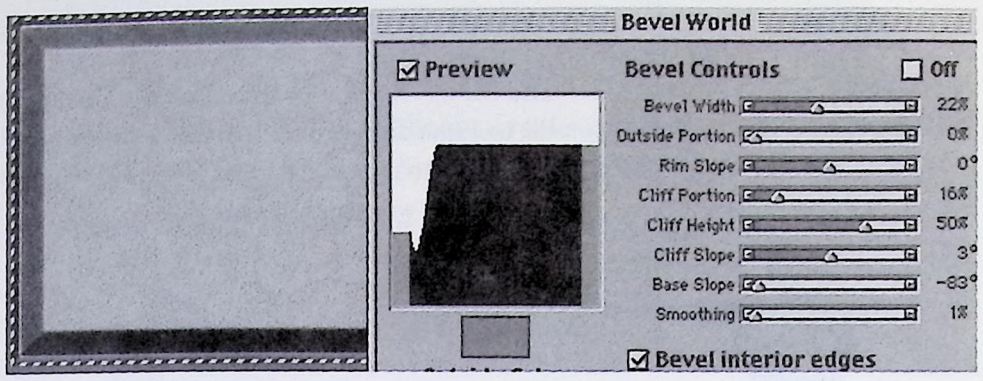
1. Create a new file with 500 pixels × 200 pixels at 72 ppi resolution. Click OK.
2. Fill it with the sports bkg pattern.
3. Choose Select>All.
4. Select the Dynamic Layers from the Objects palette. Select Bevel World and click the Apply button.



This image is going to be reduced to the smallest number of colors possible for the Web page, so it is critical that the drop-shadow on type or objects is not blurred out. A little item like that adds many colors to the weight of the element.

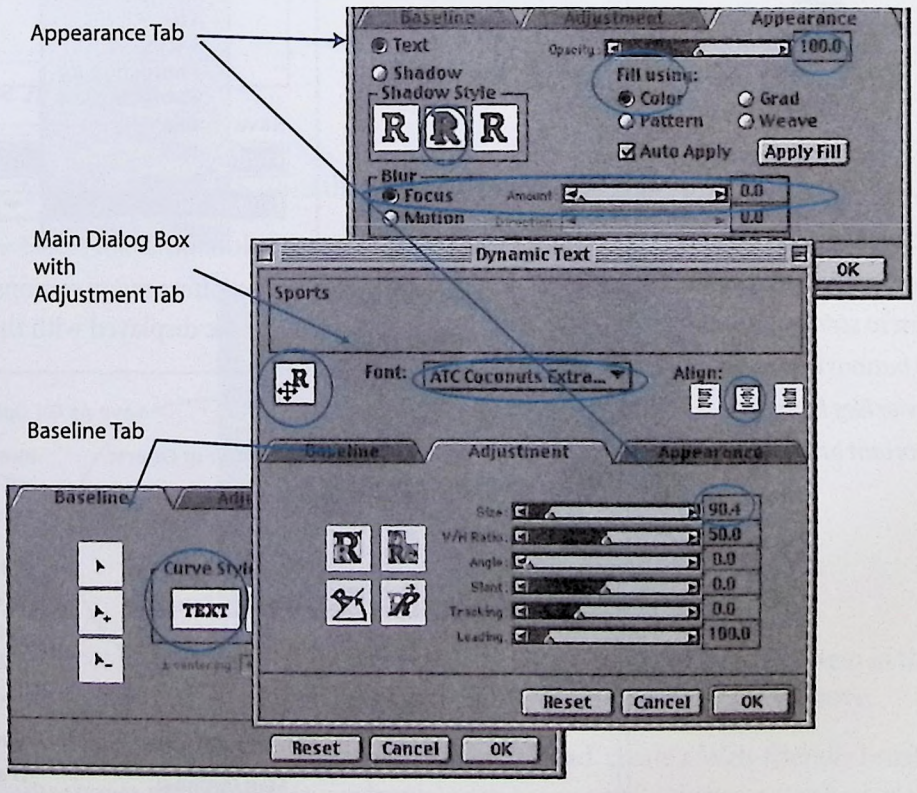
The Position icon

5. Adjust the sliders to create a beveled edge. The settings below determine the bevel in the illustration.



6. Leave the Lighting sliders at their default settings. Click OK to apply the bevel and to exit the dialog box. In the Color Palette, choose that same green (99CC99).

7. From the same Dynamic Layer palette, choose Dynamic Text and click the Apply button. Using the ATC Coconuts Extra Bold font, type the word "Sports" and set up the three "Tabs" as shown below.



8. Move the type into the center of the banner by selecting the Position icon (next to the Font pull-down menu).

9. When everything is set correctly, click OK. On the Objects palette, in the Layer pop-out menu, choose Drop All.

10. Leave your work open on the screen.

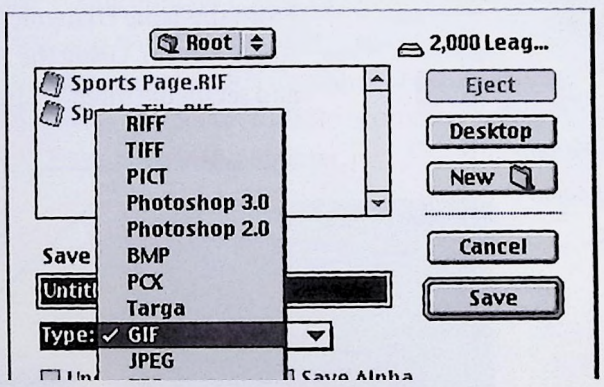
GIF and JPEG

There are two formats that will come in handy for reducing the number of colors in an image — GIFF and JPEG. For file extensions, they are truncated to GIF and JPG.

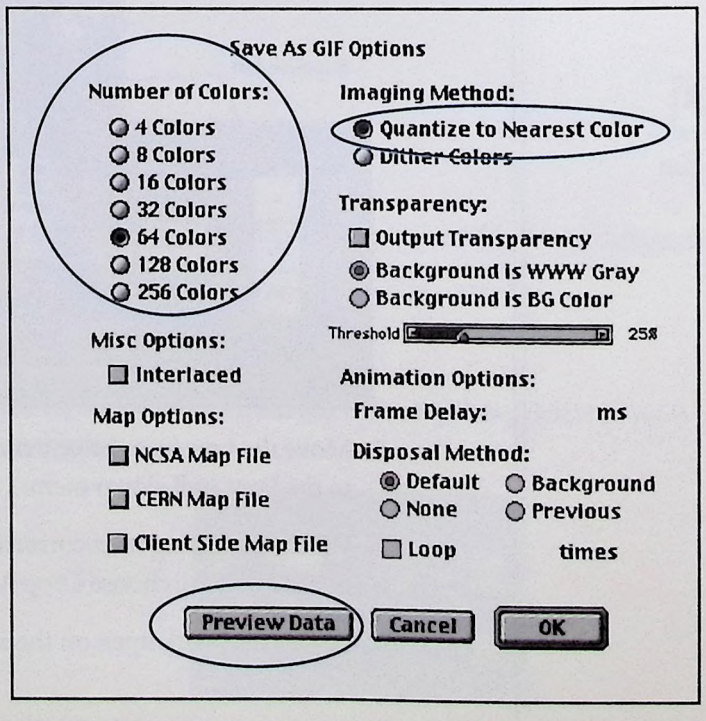
The GIFF (The Graphic Interface File Format) reduces the colors in a full color image file to a specific number. It is the method of choice for Web designers as it provides a quick way to reduce flat areas of color. JPEG is better suited for photographic or art images. We will examine both.

Save as GIF

1. Select File>Save As. From the Format pop-out menu, choose GIF. Name the file "Banner.GIF" and click Save.



2. The GIF dialog box offers many options, including a Preview option allowing you to see the graphic displayed with the reduced Color palette chosen.



Always choose the smallest number of colors that you possibly can. Start previewing at 4 and work upward. It is best to scrimp on banners and buttons and save the heavier files for more important images.

Create Web pages to fit on the monitor without the need to scroll. The most common monitor used in the industry is 640 pixels wide × 480 pixels high.

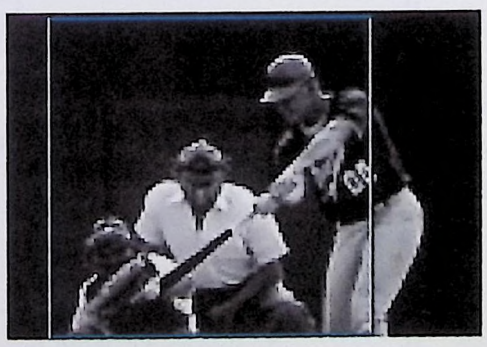
3. Try the different number of colors and preview. Select 16 colors. Be certain that Quantize to Nearest Color is selected. Click OK to exit.
4. We need to save the little tile with the same GIF setting. Make **s_tile.RIF** the active file. (It should still be on the screen.)
5. Choose File>Save As. Change the last three letters "RIF" to "GIF". Select the GIF format and, in the GIF dialog box, force the number of colors to 16. Click OK.
6. From the Root folder, open the **s_page.GIF** document we set up for the "mock-up" Web page. With it selected, choose File>Save As. Choose the GIF format from the pull-down Format menu and click Save. In the GIF dialog box, change the colors to 16 and click OK.
7. Click on the **Banner.GIF**. Choose Select>All.
8. With the Adjuster tool, drag it into the **s_page.GIF**. Center it on the top of the page. (See the example of the placement at the end of the chapter.) Click the Drop button on the bottom of the Layer list.
9. Save your document. Close any other open files without saving any changes.

Posterizing Using Color Set forces an image to use a 216-color, Web-safe palette.

The idea in Step 4 is to minimize banding by creating a rough texture — not to paint over the banded areas smoothly with flat color.

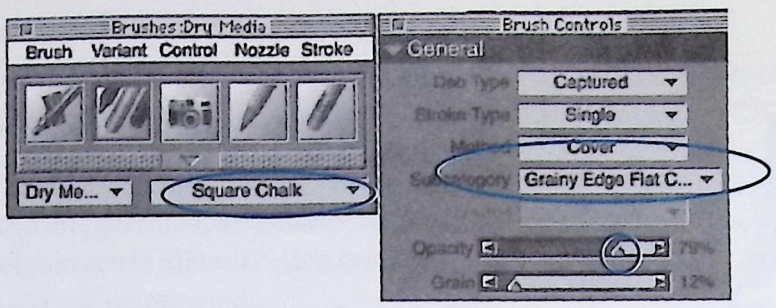
Create JPEG files

1. Open **Baseball.TIF** from the **SF-Painter** folder.
2. Select the Crop tool. Crop as shown below.

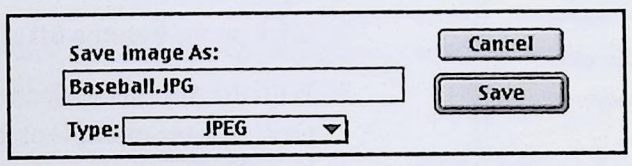


3. Choose Effects>Tonal Control>Posterize Using Color Set. (The last item in the Effects >Tonal Control menu — not the Posterize command listed above.
4. Do not be dismayed at the color banding. Instead, create a Web-friendly brush (as shown in the following example) with a very small brush size (try 2 pixels) and "dot-in" dabs of paint to smooth out the transitional banding caused by a reduced Color palette. With the brush selected, sample colors to paint with by holding the Command/Control key. The brush will turn into a Dropper icon. It will revert to a brush as soon as you release.

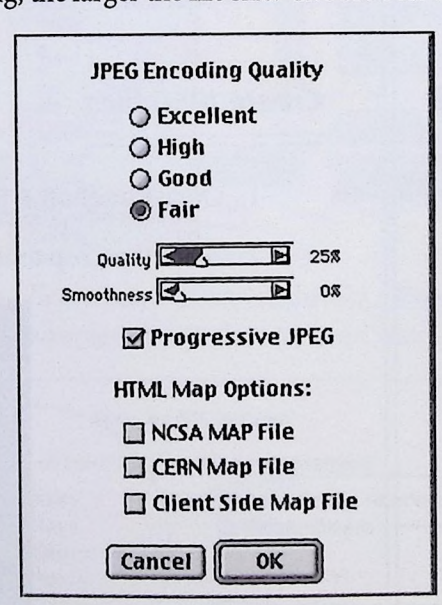
JPEG stands for Joint Photographic Experts Group — the committee of researchers, photographers, and filmmakers who devised the compression scheme.



5. Save this picture as "Baseball.JPG" into the **Root** folder. Click the Save button.



6. In the JPEG dialog box, you will be prompted to choose the compression. The better the encoding, the larger the file size. Choose Fair and click OK.



Whenever you're working with GIF or JPEG conversions, don't click your original. Make a clone and leave the original with all its image information.

7. Select>All. With the Adjuster tool, drag the Baseball image into the Sports Page. Place it exactly where you want — we will make it a Client-side image map that must remain in the same position.

8. Keep the document open for the next exercise.

URL stands for Uniform Resource Locator.

Understanding Image Maps

Image maps are clickable regions on a Web page that are linked to other page addresses or URLs. By clicking within a designated area, you can jump to different sites on the World Wide Web, to different pages in the same site, or to a different place on the same page.

Client-side image maps are called "client-side" because the code for the link resides within the HTML code of the page. (The client site has the code.) When you pass your cursor over the "hot spot" of a client-side image map, the linked URL is displayed at the bottom of the browser window in the "linked URL" field.

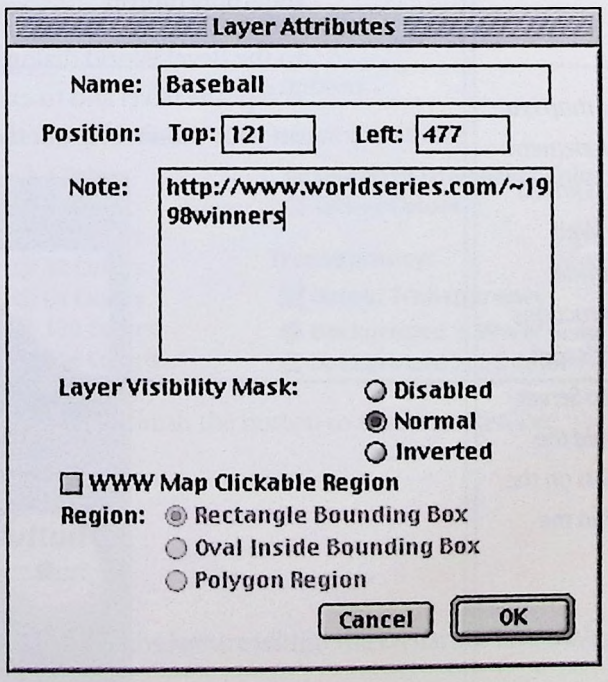
Server-side image maps have their name because the code for the link resides on the server as a CGI script and not within the page's code. If you need a server-side CGI script, speak with your service provider. This is a simple matter, but you need their scripts.

When you pass your cursor over the hot spot of a server-side image map, the coordinate information is displayed at the bottom of the browser window in the "linked URL" field.

Create a Client-Side Image Map

1. Select the Baseball layer.
2. Double-click on its name in the Layer list to display the Layer Attributes dialog box.
3. In the Layer Attributes dialog box, select WWW Map Clickable Region.
4. In the URL field, type the exact address (URL) of the page linked to the image map. (This is just an example below.)

Client-side image maps translate circular and rectangular selections as they are drawn. Ovals, however, are seen as rectangular areas.

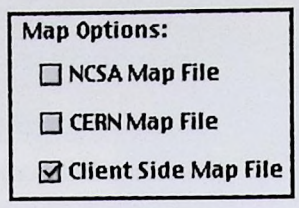


5. Click OK to exit the dialog box. When you're finished defining all the client-side image maps, and wish to export the map as a GIF or JPEG file, choose Save.

When Painter exports a client-side map, an HTML table is also exported. You can open the HTML file in your browser by choosing to View Document Source. Select it and Cut and Paste the code into the proper place within the page you're building.

A Client Side Image map is a clickable Web page element (like a button) that is linked to another page or Web element. The Client Side part means the instructions live within the client's root folder. There are also Server-side maps which hold the instructions as scripts on the server and not within the Web page.

Both GIF and JPEG options dialog boxes support Client Side Map File. Be certain that you select this option.

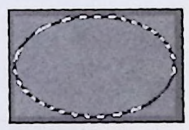


The lower left portion of the GIF options dialog box illustrating the Client Side Map File option, which should be selected.

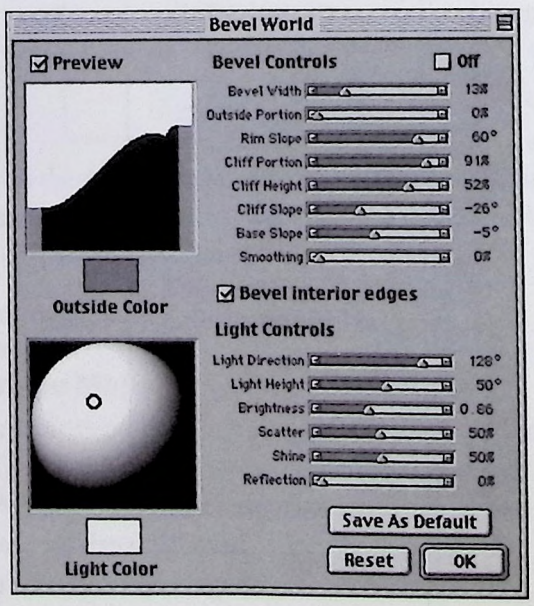
6. Leave the file open.

Create a GIF Button with Transparency

1. Create a new document with 120 × 80 pixels at 72 ppi.
2. Fill it with the **sports bkg** pattern.
3. Select as much of it as you can with the Oval Selection tool.

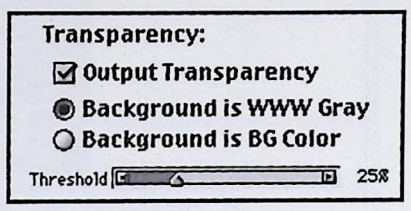


4. Open the Dynamic Layers from the Objects palette. Select Bevel World and click the Apply button.
5. In the Bevel World dialog box, set the sliders as shown below. Click OK to accept the bevel and to exit the dialog box. (If these settings appear too bright on your monitor, lower the Brightness slider to suit your monitor.)



The WWW gray is the default Netscape 75% gray. The setting background BG color is the secondary color chosen in the Color palette.

6. Choose File>Save as. . . . Name the file "Button.RIF" to preserve a copy at full image detail. Save it in your **Root** folder.
7. In the Layers palette, click the Drop button to flatten the layer. Select File>Save As again. This time, save the file as "Button.GIF" into the **Root** folder. The GIF options dialog box will appear. Set the Number of Colors to "64", and check the Quantize to Nearest Color and Output Transparency radio buttons. Click OK.
8. In the GIF Options dialog box, select both Output Transparency and Background is WWW Gray.

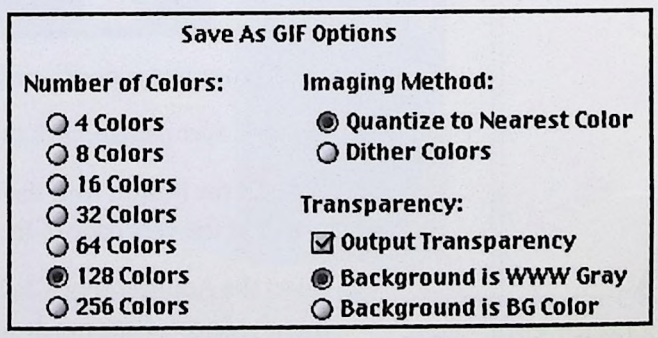


9. Click the Preview Data button to see that the area outside the button is transparent.

10. Click OK to re-enter the Save As GIF Options dialog box.

You can also choose Apply from the Dynamic Layers pop-out menu.

11. If you are not satisfied with the way the numbers of colors affects the image, you can try two things: (1) Select the Dither Colors option (instead of Quantize to Nearest Color) and examine the button with Preview Data, or (2) Raise the Number of Colors. Click OK to exit the dialog box.



12. Leave this file open to finish the button in the next exercise.

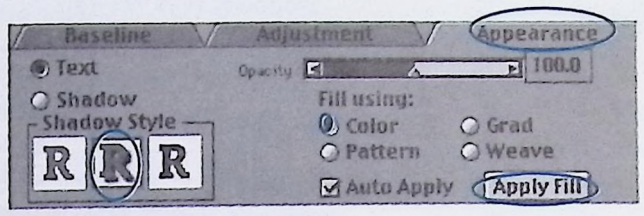
Add Text to the Button

Painter 6 offers a Text on Paths feature within the Dynamic Text dialog box which bears exploring.

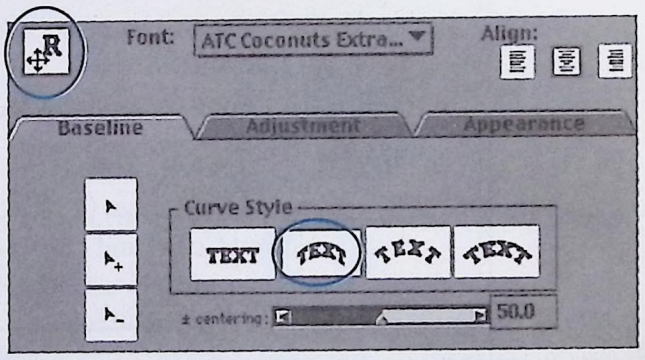
1. Set up the text color by first choosing white in the Color palette.

It is difficult to get "light" weights on elements which depend on gradation. Try to plan your page to take advantage of thrifty, flat areas of color.

2. Choose the Dynamic Text layer and click Apply.
3. In the dialog box, select ATC Coconuts Extra Bold, type the word "More", and set the type size to 18. Drag the word into position above the button when it appears within your image.
4. In the Text Appearance section, select the drop shadow, choose to Fill using Color, select black in the Color Picker and click the Apply Fill button. Make certain that the shadow has no blur. Click OK.



5. Click on the Baseline Tab in the Dynamic text dialog box. Select the second text path, as illustrated below. A thin blue line (the path) will appear across your button. Grab it with the Position tool and drag down and to the left. The word "More" will appear floating above your button on a curved path.



6. When your text is positioned perfectly, click OK.
7. On the Layer palette, click the Drop button to drop the type to the base file.
8. Reselect the button with the Oval Selection tool. (It's easy if you start with the cursor at the very edge of the image and drag to the right and down.)
9. Select the Adjuster tool. Click the Option/Alt key and drag the selected button into the Sports Page mock-up. Place the button in the lower-left corner of the page.
10. Save the changes to **Button.GIF** and then close the file.

In Step 9, you can also Copy and Paste the button onto the Web page.

The Image Slicer

With the Image Slicer, you can break up graphics into separate sections. Each of these sections is exported separately and is then reassembled using an HTML table. There is no need to know HTML code. Painter generates it in the background as you use the Image Slicer. There are several advantages to having a Web graphic sliced.

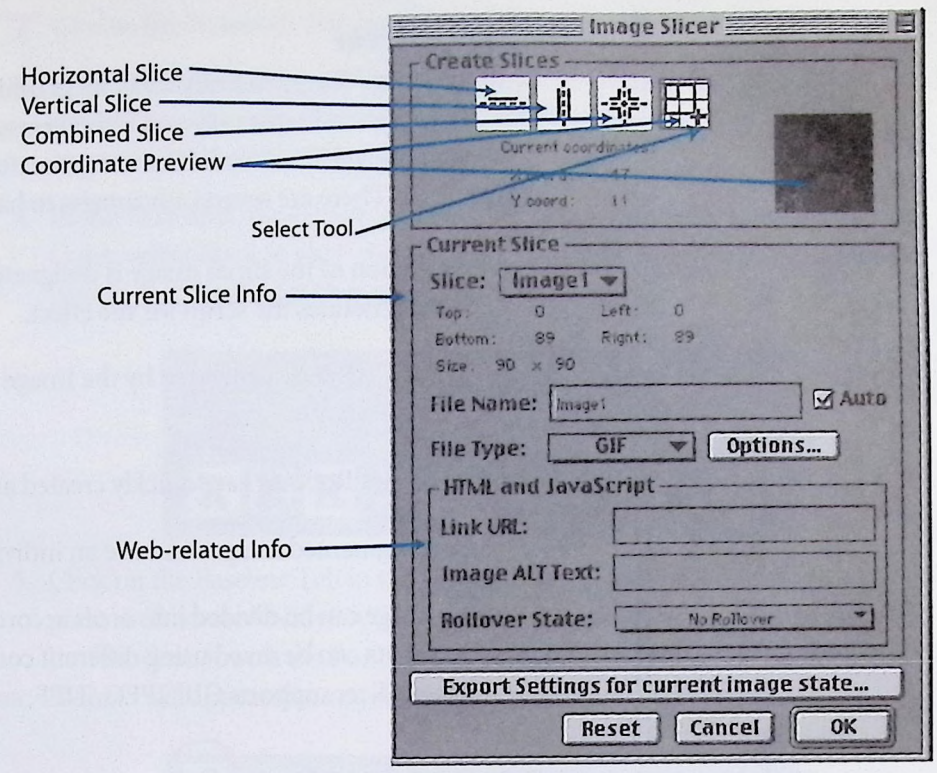
- If a section of the sliced image is designated as a JavaScript Rollover, the Image Slicer generates the script for the effect.
- The HTML code generated by the Image Slicer can be copied and pasted into your HTML file.
- JavaScript Rollovers are quickly created and loaded.
- Each segmented image can have an individual link.
- An image can be divided into areas according to compression requirements. Segments can be saved using different compression modes and formats. The Image Slicer supports GIF, JPEG, TIFF, and text.

Use the Image Slicer

1. Open **Basketball.TIF** from the **SF-Painter** folder.
2. Select the Crop tool and crop the image as shown.

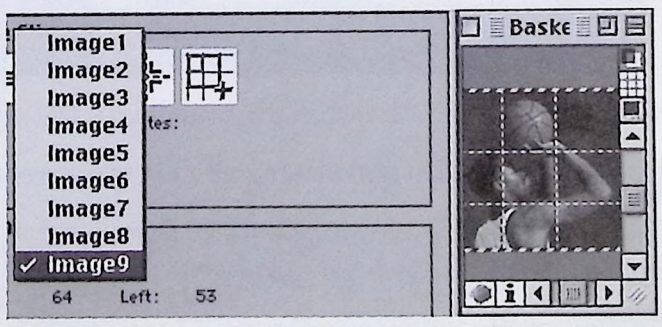
3. Select the Image Slicer from the Dynamic Layers panel in the Object palette. Click the Apply button. Take a moment to examine the dialog box.

The Image Slicer is useful for saving a bulky graphic at separate compression schemes, depending on how much detail is needed in the different sections. Plain, flat areas can probably be saved as efficient GIF files, while detailed areas will demand JPEG compression.



4. With the Horizontal slicer, create three slices by clicking three times on the picture where you want the slices to appear. You can move them, if necessary, to aligned them.

5. Select the Vertical slicer and make three vertical sections. Notice how the nine slices are listed from top left to lower right in the Slice pop-up menu.



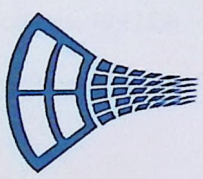
6. In the dialog box, from the Slice pull-down menu, choose the slice named Image 1. (It should already be visible in the menu.) It can be compressed quite a bit, so set its file type to GIF, and click the Options button.

7. In the GIF Options dialog box, set the number of colors to 4 (the lowest). Preview Data if you wish. Click OK.

8. If the slice is to be linked to another place, enter the URL in the Link URL box. If no link needs to be set, leave it blank.

9. If you wish a text tag to appear in case the image does not load in the browser, enter it in the "Image Alt.Text" field. (This is equivalent to an "ALT" attribute of the HTML <IMG> tag.) If not, leave it blank.

Unless you name your slices, the Image Slicer names slices by their position — starting at the upper-left side of the graphic. This may make it difficult to reselect slices from the Slice pop-up menu.

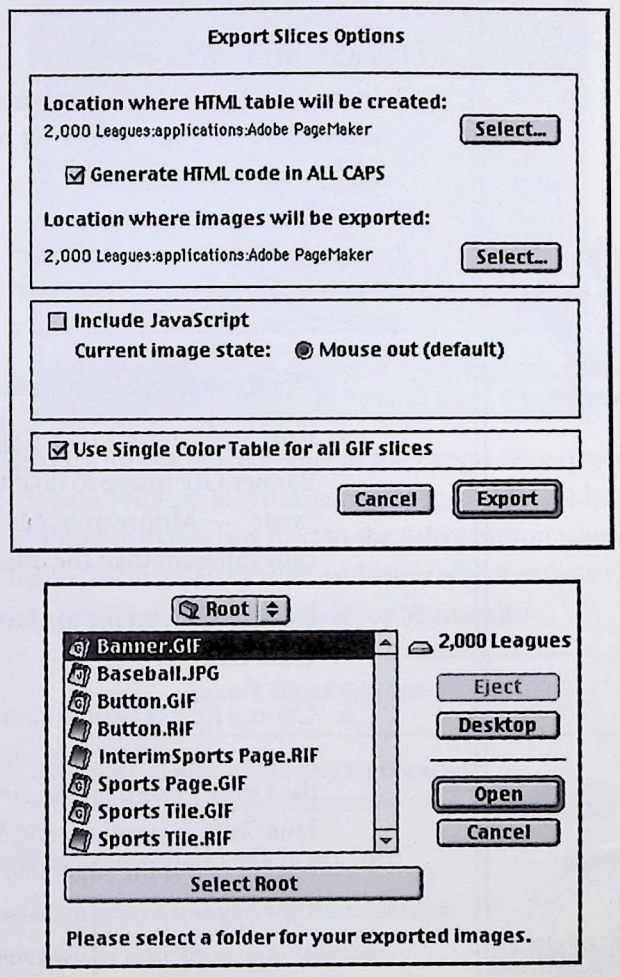


To paste a copied URL into the Link URL entry box, click the Right mouse button, and then choose Paste from the Shortcut menu.

To delete a slice, select the appropriate slicer (horizontal or vertical) and, while holding the Command/ Control key, click on the slice you wish to remove.

10. The Rollover State is used if the Rollover JavaScript is supported by the slice. If not, leave it.

11. The Export Settings for the Current Image State button are used to set the location where the HTML table will be created and stored. Click the top Select button and navigate to where the HTML table will be created. There's no need to click the lower Select button and navigate to the location where all images will be exported. Painter sees the first location that you've selected and automatically sets the second. Enable the check box which specifies that a Single Color Table will be used for all GIF slices to avoid Color palette conflicts for exported slices.

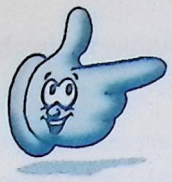


When you click the Select button, navigate to your Root folder and click the Select Root button (Macintosh dialog box).

12. When you have finished in this dialog box, click the Export button.

13. Select the next slice and repeat this procedure, leaving the format set to GIF. You will have to raise the number of colors used in the GIF Options dialog box. Work through the Image Slicer dialog box for all nine slices, changing the format from GIF to JPEG where greater detail is needed. When all slices have been exported, click OK to exit the Image Slicer dialog box.

14. Save the file as "Basketball.RIF" into the **Root** folder.



Place the Image Copy

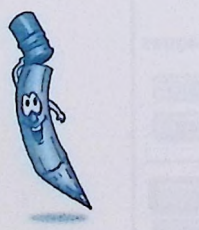
1. For our mock-up, you'll want to Deselect the Image Slicer layer by clicking on the Canvas layer of the layer list. Select>All. Click on the picture with the Adjuster tool and, while holding the Option/Alt key, drag it into the mock-up of the Sports Page.
2. Position it in the center of the page. Save the changes to **s_page.GIF.**
3. Close the **Basketball.RIF** file.

JavaScript Rollovers

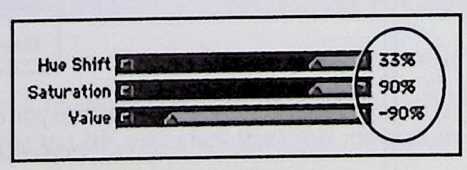
JavaScript Rollovers are elements on a Web page which change appearance depending on whether they are in their "at rest" state, being rolled-over by a mouse, or are clicked on by a mouse.

Create a JavaScript Rollover

1. Open **Banner.GIF** from the **Root** folder. Select>All.
2. With the Adjuster tool, hold the Option/Alt key and click twice on the Banner.GIF image to float two copies. You need three images, one for each "state" — Mouse over, Mouse out, and Mouse click. (Each copy will be dramatically different than the others in terms of color and value.)
3. Double-click on the top layer. In the Attributes dialog box, rename it "Over". Click OK.
4. Choose Effects>Tonal Control>Adjust Selected Colors. The ensuing dialog box prompts you to sample some of the medium green background by clicking with the Dropper tool on the picture. Change the color of the layer by moving the Hue Shift, Saturation, and Value sliders located near the bottom of the dialog box. (Try out the suggested values illustrated below.)



You must exit the Image Slicer dialog box to manipulate your image. Double- click on its name in the layer list to return and complete the Rollover settings.



5. Click OK to accept the change and to exit the dialog box. (Remember, we want to change the color dramatically.)
6. Repeat the above two steps on the lower layer, changing the color by again sampling the green and moving the three sliders. This time name the layer "Click". There should be three very different versions of the button stacked up.
7. Turn off the Eye icons of the two layers in the layer list so that the canvas alone is visible. Be certain that the canvas is the active layer.

JPEG options. For good results on the screen, set them to:

Good

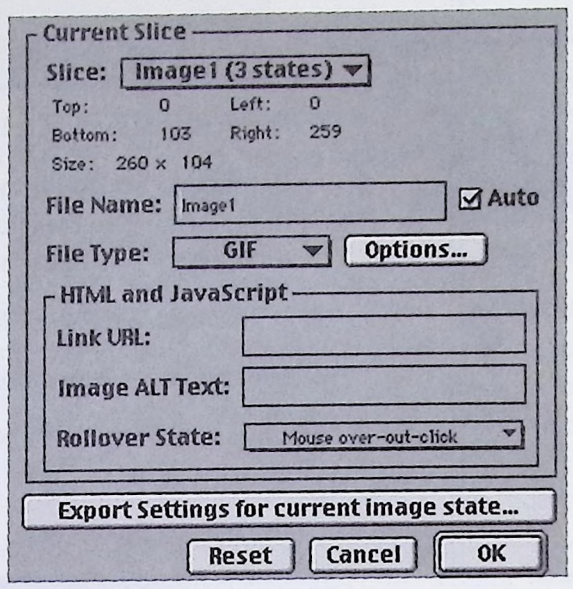
Quality — 65%

Smoothness 10 –15%

Enable Progressive JPEG

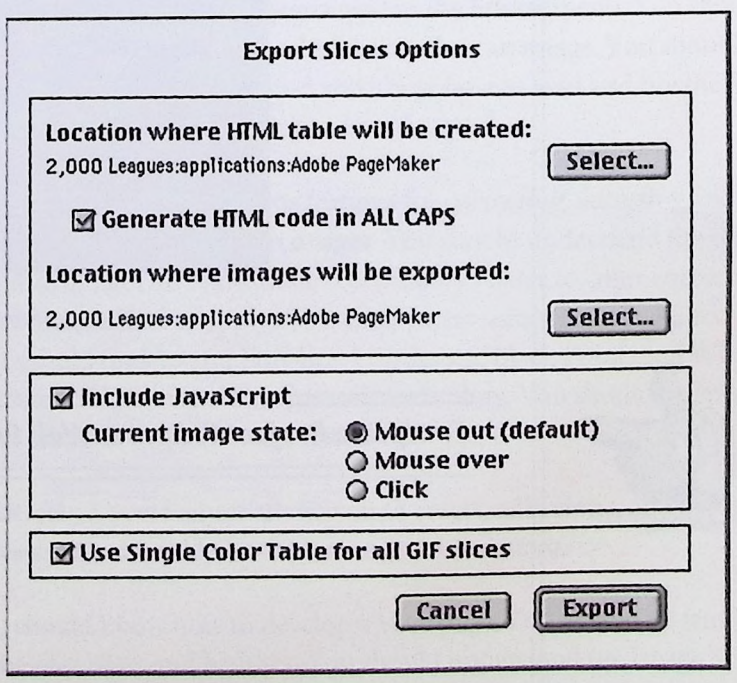
8. Select the Image Slicer from the Dynamic Layers menu (in the Objects palette). Click Apply.

9. Near the bottom of the dialog box, change the Rollover State pop-up menu to display Mouse over – Mouse out – Mouse click. (Notice that the Slice menu has changed to reflect that the Image 1 has three states.)

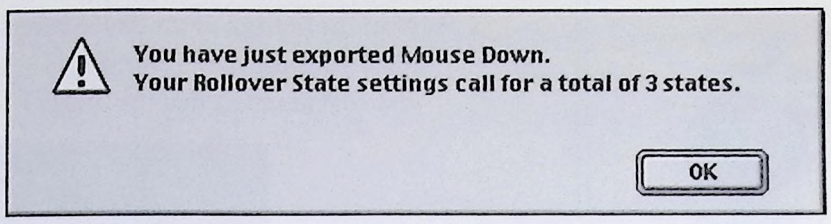


JavaScript Rollovers are not supported by all browsers. All JavaScript 1.2 functions (Mouse Over, Out, and Click) are supported by Netscape 4.x and higher, and Internet Explorer 4.x and higher. JavaScript 1.1 (Mouse Over and Out) is supported by Netscape 3.x and higher and Internet Explorer 4.x and higher. Older versions of browsers do not support it at all.

10. Export the settings for the current state in the Export Slices Option dialog box by clicking the Select button and navigating to your Root folder. The path taken will appear within the dialog box next to the Select button when completed. (Be certain to enable "Include JavaScript" and select which Rollover position this slice indicates — Mouse out, Mouse over, or Mouse click.)

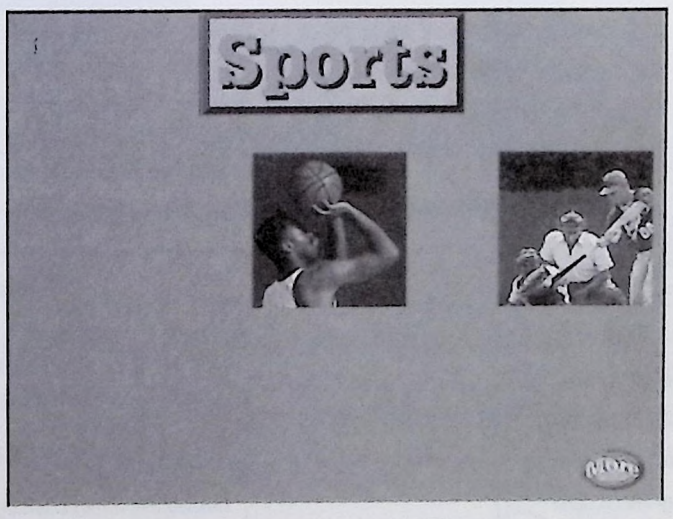


11. When you click the Export button, Painter will remind you that you are exporting one of a series of Rollover states. Click OK.



When you return to the Image Slicer dialog box, click OK to exit.

12. Repeat this process for the other two states. Choose the appropriate layer and make certain that the Slice pull-down menu (in the Image Slicer dialog box) is set to Image 2 or Image 3 (not still set to Image 1.)
13. If you wish, load the HTML file into your browser to see if it works correctly.
14. Save and close the picture.
15. Click on the **Sports Page.GIF**.
16. Save and close the file. We will be working on this again when you begin working on Project F.



The Sports Web Page up to this point.

It is critical for the Rollover states to be the same position and size.

Complete Project F: Sports Web Page

Review 2

Chapters 8 Through 13:

In Chapters 8 through 13, we learned about mosaics and tessellations, how shapes are employed, and gained an understanding of effects — their power and functionality, and when to apply them to the artwork. We learned how basic color theory relates to color correction. We learned about Painter's animation features, and finally, we learned how to develop a Web page. After completing the second half of this course book, you should:

- Understand traditional mosaics and tessellations, and know the similarities and differences between their functions and time-honored techniques. You should understand vector-based artwork, realizing its constraints and advantages and will have gained experience creating mosaics and tessellations.

- Know how to create shape objects and how to introduce the attributes associated with shapes. You should be familiar with the shape tools, know how to manipulate and edit shapes, and how to create compound shapes. You should also understand the similarities and differences between pixel-based layers and shapes.

- Understand effects, both those created in the Effects menu and new ones created as Dynamic Layers. You should know how to access the Effects menu and how effects are logically grouped in the Effects menu. You should know how to use effects to change the basic look of an image. You should be familiar with using the Fade command and know how to load and use the F/X brushes to create effects.

- Understand Painter's various features for correcting, adjusting, manipulating, and assigning color space to images. You should understand the optical qualities of light and how basic color theory relates to color correction. You should know how to apply color corrections using the Tonal Effects menu. You should understand Equalize, Histogram, Black Point, and White Point. You should know how to adjust selected colors. You should be familiar with color sets, and be able to annotate a color set.

- Understand how Painter allows you to create, edit, clone, and composite movies. You should know how to create animations.

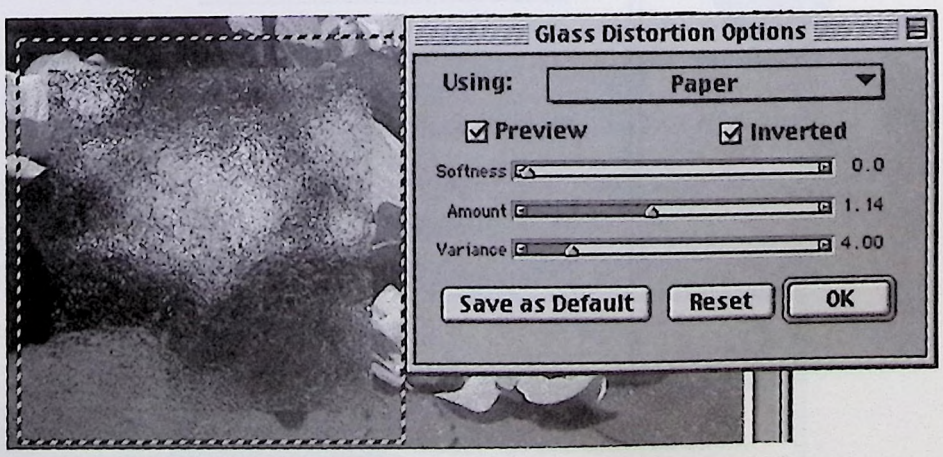
- You should know how to develop a Web page. You should be familiar with Web-safe colors and brushes. You should understand the Image Slicer, be able to create a client-side map, and know how to create a transparent GIF.

Project A: Southern Garden Book Jacket

Creating the Background

1. Open **Waterlilies.TIF** from the **SF-Painter** folder.
2. Make sure that both the Art Materials and Objects palettes are on the screen. If they are not, select them by choosing them from the Windows menu.
3. With the Rectangular Selection tool, select the foreground "lily" and a bit of the green leaves.

4. In the Objects palette, select the Dynamic Layers. From the Palette drawer or Menu list, choose Glass Distortion.
5. Click the Apply button.
6. Select Paper from the Using pop-out menu. Because the Art Materials palette is on the screen, you can experiment with different paper textures. The paper in the illustration is Pavement from the default set.



Glass Distortion created with these settings.

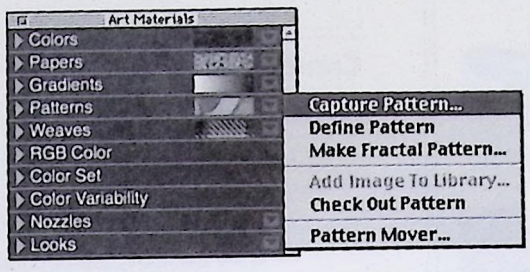
7. Click the OK button to apply the effect.
8. In the Objects palette, switch from the Dynamic Layer palette to the Layer palette. Toward the bottom right is a button marked "Drop." Click this to permanently commit your effect to the selected canvas area.

The keyboard shortcut for the Rectangular Selection tool is "R."

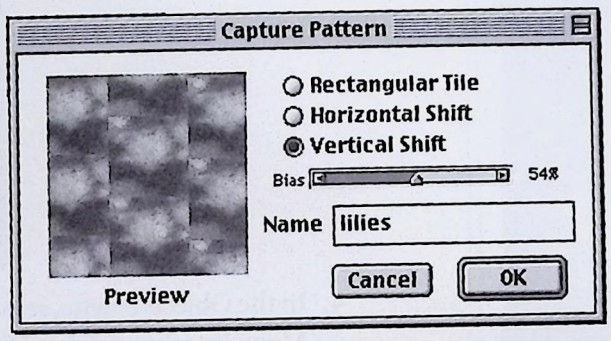
The keyboard shortcut to display the Art Materials palette is Command/Control-3.

The keyboard shortcut to display the Objects palette is Command/Control-4.

9. Reselect this distorted area with the Rectangular Selection tool.
10. From the Pattern pop-out menu, select Capture Pattern.



11. The Capture Pattern dialog box prompts you to adjust the offset bias for the vertical and horizontal tiling. Move the slider to stagger how the flowers line up. Name this new pattern "lilies".

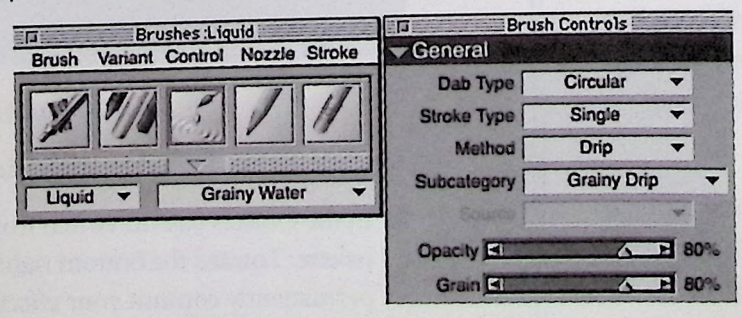


12. Click OK to apply these tiling parameters and to exit the dialog box. The pattern is saved and is now the active pattern in the Pattern palette.

Type a "G" to quickly access the Grabber tool. Switch to the Brush by typing a "B."

Refining the Seamless Tile

1. Choose the Check Out Pattern command from the Pattern pull-down menu. A new file appears on the screen. This is your opportunity to make a seamless tile from your pattern.
2. With the Grabber tool, and while holding the Shift key, click directly in the middle of the tile. With the mouse button depressed, drag to the right. The tile's edge will move to the center of the tile and it will be an obvious edge.
3. Select the Liquid brush, Grainy Water variant. Keep the size small — to approximately 2 or 3. Set it up as shown below.

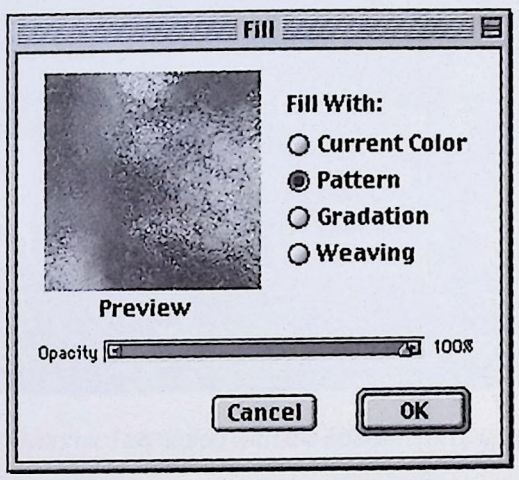


4. Edit the seams so that the tiles will wrap around cleanly.
5. From the Pattern pull-down menu, choose Add Image to Library. When prompted, click Yes to save over the existing **lilies** file. Leave your work open for the next exercise.

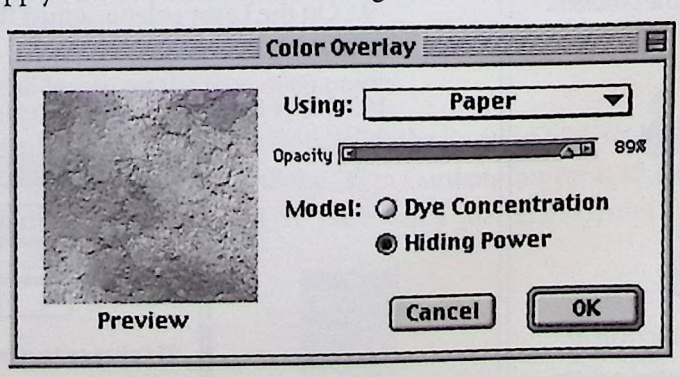
In Step 4, for the cleanest effect, make tiny smudge marks that mimic the glass distortion "waviness."

Creating the Book Jacket

1. Create a new, blank document 760 × 400 pixels at 72 ppi as an Image type, with a white paper color.
2. Select Effects>Fill. In the Fill dialog box, choose Pattern at 100%.



3. Select Effects>Surface Controls>Apply Surface Texture. Select Paper from the Using pop-out menu. (The Pavement texture should still be selected.)
4. Leave the sliders at their defaults and click OK to apply the effect and exit the dialog box.
5. Set creamy beige to be the primary color in the Color palette.
6. Select Effects>Surface Control>Color Overlay. Set it up as shown below. Click OK to apply the effect and exit the dialog box.



7. Save the file as "Book Jacket.RIF" into your **Work in Progress** folder. Leave it open.

The keyboard shortcut for Fill is Command/Control-F.

The keyboard shortcut to display the Surface Texture dialog box is Command/Control-Shift-S.

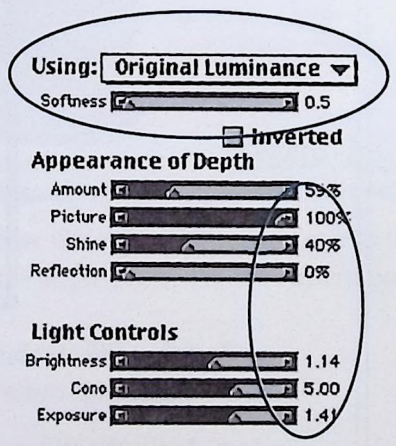
The pragmatic reason for making a clone is to be certain that original images remain pristine.

Occasionally, surface texture based on Original Luminance only applies the effect to a part of the image and "crops" off the rest of the picture. If this happens, close the clone, make a new one, and run through each setting on the Using pop-out menu. It may be necessary to try this on a few fresh clones. This relentless pursuit of Original Luminance seems to straighten out the problem.

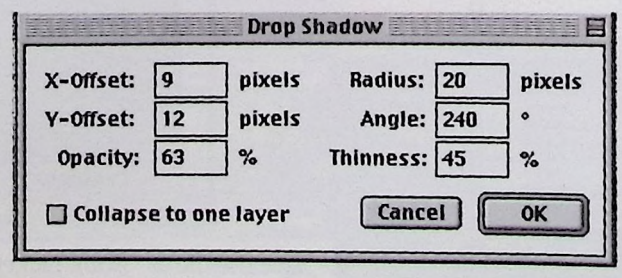
The keyboard shortcut to display the Control palette is Command/Control-5.

Making a Clone-Based Texture for Text Background

1. Make certain that the **Waterlilies.TIF** file is active.
2. Select Canvas>Rulers>Show Rulers.
3. Crop the image to be approximately 2.5″ × 3″. Feature the large waterlily in your selection. When your selection is perfect, click the "biting" scissors animated cursor to accept the crop.
4. Make a clone of this small waterlily picture.
5. Choose Select>All, then click Delete/Backspace to clear the canvas.
6. Choose Effects>Surface Control>Apply Surface Texture. From the Using pop-out menu, select Original Luminance. Set the sliders to appear similar to those below. Select the Light Color chip, and choose a very light greenish-yellow. Click OK to accept the effect and to exit the dialog box.



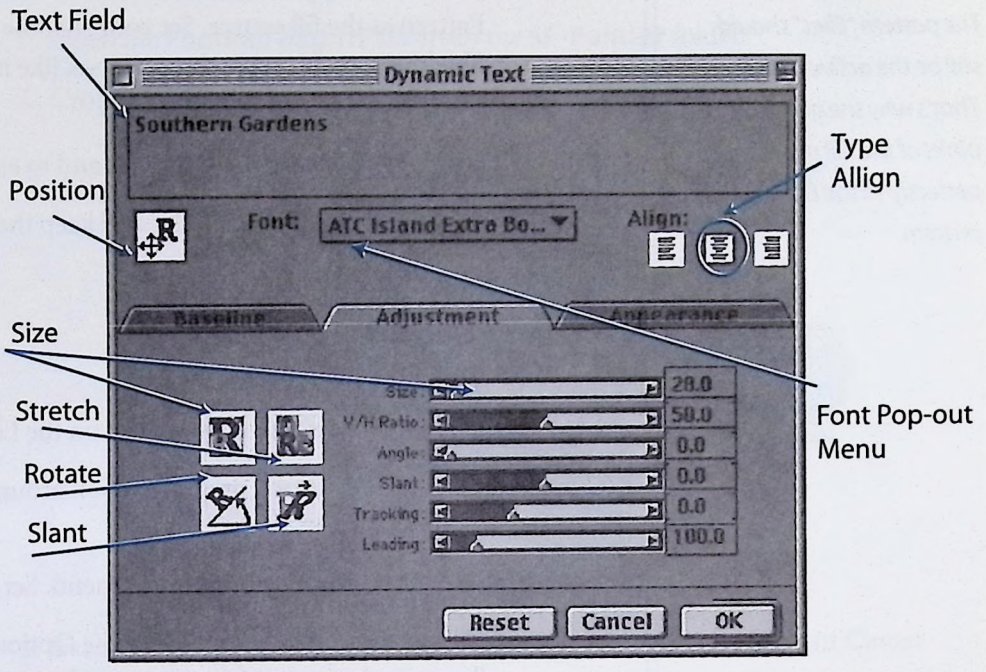
7. Choose Select>All. With the Adjuster tool, drag the light green clone into the Book Jacket background picture.
8. Display the Rulers by choosing Canvas>Rulers>Show Rulers. Position the clone about an inch from the left and centered vertically.
9. On the Layer palette, adjust the Opacity to 60% and the Composite Method to Magic Combine.
10. Select Effects>Objects>Create Drop Shadow. Type in these parameters:



11. Save **Book Jacket.RIF**. Close all other files without saving changes.

Dynamic Text

Painter 6 features an improved Dynamic Text layer. You can place editable text on your image with on-the-fly formatting, text on paths, distortion, rotation, scaling, leading, kerning, fill, and texture from within the dialog box. This new text tool differs from the text tool on the basic Tool palette which treats text as individual shapes.



View of Dynamic Text dialog with the Adjustment options visible.

This is a very memory intensive plug-in. Don't make any fast moves. Let it catch up to your changes.

If you double-click on any of the type icons, the setting will return to normal.

Dynamic Text Techniques

1. Make sure the Canvas is the active layer. Display the Rulers by choosing Canvas>Rulers>Show Rulers. Drag out a vertical guide to the 10.25″ mark.
2. Select the Dynamic Layers from the Objects palette. Select the Dynamic Text icon. Click the Apply button to access the Dynamic Text dialog box.
3. Type the words "Southern Gardens" on two lines in the text field. Use ATC Island Extra Bold Italic from the Font pop-out menu.
4. Use the sliders to set the type to 60 points.
5. Select the Right Justified Type icon. With the Position tool, reposition the type so that the "n" in Southern and the "s" in Gardens line up at 10.25″. Place the word so the top of the "S" and "h" are about a quarter inch from the top edge.

The pattern "lilies" should still be the active pattern. That's why the greens and pinks of the Fill match so perfectly to the Book Jacket pattern.

6. Click the Stretch icon and drag it a little to the right to make it wider. The V/H Ratio slider should read 39. You can also drag the slider to 39. Reposition the text so that it falls at 10.25″.
7. Adjust the Leading slider to 0.87 to move the lines of type closer together.
8. In the Text Appearance section, leave the type opacity at 100%, and choose Pattern as the fill source. Set your shadow style to the far right icon — the Inside Shadow icon. It makes the type look like it is cut out and recessed from the paper surface.
9. Click OK to accept these settings and to exit the dialog box.
10. Save the changes made so far and keep the document open.

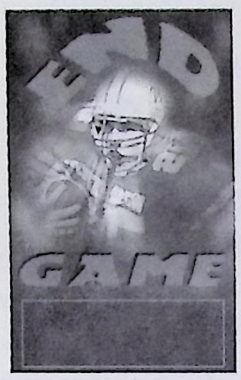
Creating an Embossing Effect

1. From the Layer pull-down menu on the Layer palette, choose Drop All.
2. With the Lasso tool, drag a selection around the pale green flower. If it is a bit loose, that's fine.
3. Choose Feather from the Select menu. Set the feather to 3.
4. Choose the Adjuster tool. Click the Option/Alt key and drag a copy of the flower to the lower-right corner of the book jacket.
5. In the Control palette, set the composite method to Multiply. Set the Opacity slider to 90%.
6. Take a moment to admire your hard work, then save and close the file.

The keyboard shortcut to display the Layer palette is Command/Control-4.

The keyboard shortcut for the Lasso tool is "L."

Final Book Jacket Cover.



Important note for Step 3:

Point-to-point cloning works like a rubber stamp — it is great for patching over unwanted areas. You can sample from the same or from a different document. When Control/Shift sampling the "source pixels", a tiny green dot appears with a white number 1, like this: 1

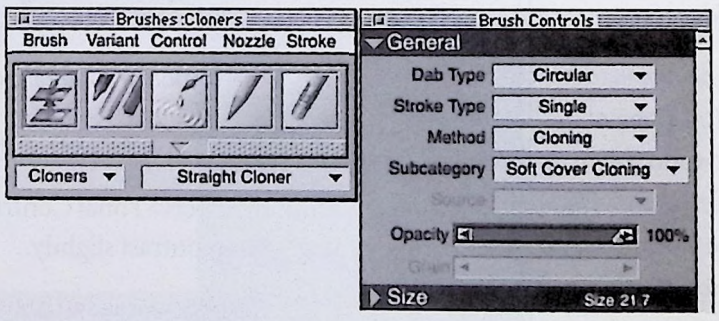
This shows exactly where the source is located. To assign imagery as the source for the "patch," press the Control key and click. Windows-based users, press the Shift key and click.

Project B: End Game Movie Poster

Preparing the Background

1. Open the **Football Bkg.TIF** file from the **SF-Painter** folder.
2. Crop the image as indicated in the illustration below.

3. From the Brush palette, choose the Cloner brush. Select the Straight Cloner variant. Set it up as shown below.



4. Removing the referee is the first item on the agenda. Click the Control/Shift key and click to define the source point for the patch job. Try using the crowd at the right side of the picture.
5. Move your cursor over to the referee's shirtsleeve and begin to paint over it. You will be "painting" with the crowd. Remove his striped shirt entirely.

After point-to-point cloning.

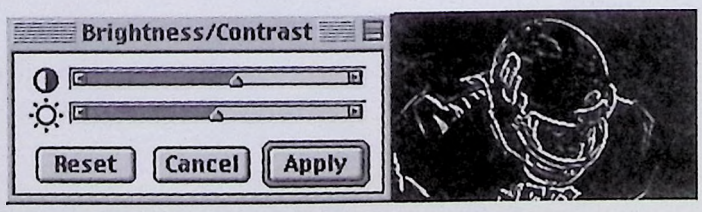
Occasionally, surface texture based on Original Luminance only applies the effect to a part of the image and "crops and offsets" the rest of the picture down and to the right. If this happens, it is necessary to quit Painter and restart it. This usually solves the problem. MetaCreations is aware of this bug; however, as it only happens randomly it is difficult to address.

The effect we are trying to create based on Original Luminance is worth the hassle of restarting; however, if the "frustration factor" gets too high, simply use a preset paper texture and move on.

6. Select File>Save As and save the file as "Football Texture.TIF" into your **Work in Progress** folder. When prompted, accept RGB color space and click OK. Then, select File>Clone.
7. Choose Select>All>Delete/Backspace to remove the imagery from the clone.
8. From the Effects menu, choose Surface Control>Apply Surface Texture.
9. Choose Original Luminance from the Using pop-up menu.
10. Set your Light Direction to two o'clock. Leave the light color set to white.
11. Click OK to apply the effect and exit the dialog box.

A section of Football Bkg.TIF at this stage in its development.

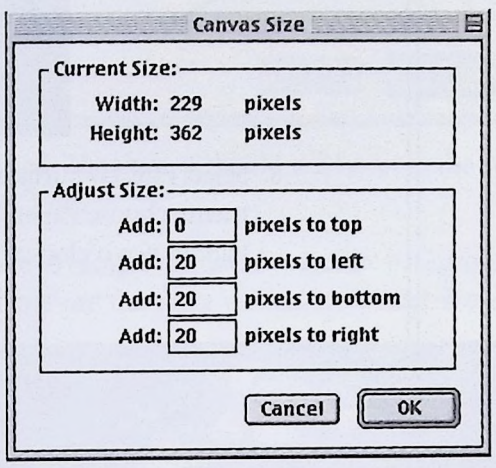
12. Select Effects>Tonal Control>Negative to reverse the image's values.
13. Return to Effects>Tonal Control. This time, choose Brightness/Contrast. Increase the contrast slightly.



14. Select File>Save As and name the file "Football Texture.RIF" this time into your **Work in Progress** folder. Make sure to change the format to RIF!

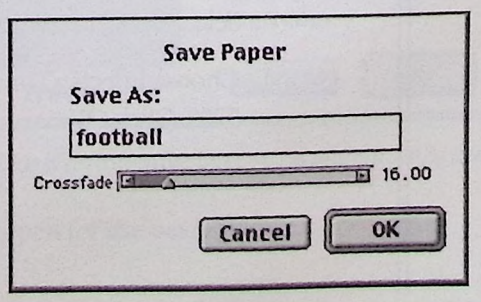
Create Custom Paper Texture

1. Make sure that the **Football Texture.RIF** file is the active image.
2. Select Canvas>Canvas Size. Add 20 pixels to the left, bottom, and right. Click OK.



3. Return to the Tool palette and select the Brush tool. The Straight Cloner variant should still be selected. From the crowd area, click Control/Shift to sample the clone source. Patch around the picture's edges to cover the newly-added canvas. Don't be concerned about any other area. The point is to create an edge which will tile seamlessly.

4. Select the entire image. (Command/Control-A.)
5. From the Paper pop-out menu on the Art Materials palette, choose Capture Paper.
6. Save the new paper as "football" and leave the Crossfade at 16. Click OK.



Hold the Shift key while dragging out a marquee to constrain the selection to a square or circle.

The keyboard shortcut to access the Crop tool is "C."

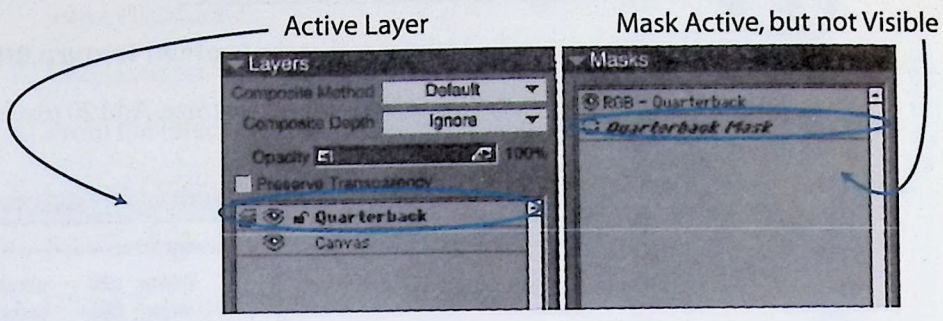
The keyboard shortcut to clear the Clone is Command/Control-A, Delete/ Backspace.

The keyboard shortcut to display the Brightness/ Contrast dialog box is Command/Control-Shift-B.

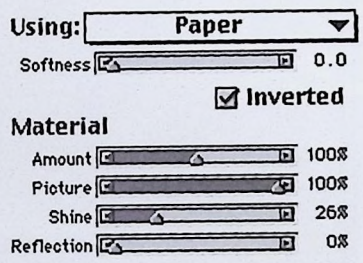
The higher the Crossfade, the smoother the transition between "cells" in the paper pattern. The default is usually acceptable.

The keyboard shortcut for Surface Texture is Command/Control-Shift-S.

7. Create a new blank canvas 466 x 720 pixels at 72 ppi. Leave the paper color set to White. Click OK.



8. Select Effects>Surface Control>Apply Surface Texture. From the Using pop-out menu, choose Paper, check the Inverted option, adjust the sliders, and set the light to two o'clock.



The keyboard shortcut for Equalize is Command/Control-E.

9. Click on the Light Color chip and set the color to a dark maroon. Click OK to exit the Color dialog box.
10. Click OK to exit the Surface Texture dialog box.
11. Save this background as "Final Football Poster.RIF " into your **Work in Progress** folder and close the file.
12. Close the file **Football Texture.RIF** and save changes when prompted.
13. Close the file **Football Bkg.TIF** and do NOT save changes when prompted.

Preparing the Quarterback

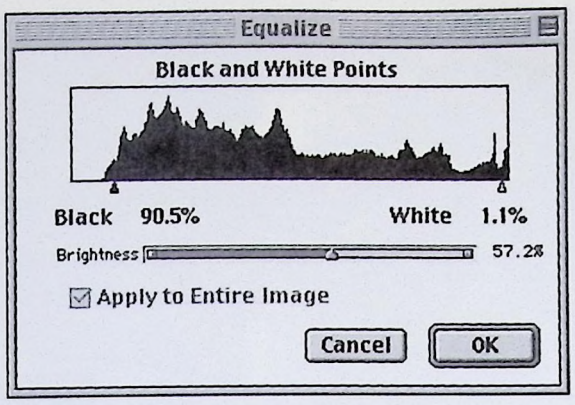
1. Open the image **Football.TIF** from the **SF-Painter** folder.
2. Display rulers by choosing Canvas>Rulers>Show Rulers.
3. Select the Crop tool and crop off 1.25" from the left side.
4. Choose Effects>Tonal Control>Equalize. Change the Brightness slider to about 57%. Click OK.

Reset the source point often to "disguise" where you sampled from.

Drag out from the size box at the bottom right of the document window to give yourself a narrow strip of gray. This border ensures that:

1. You can paint right up to the image edge without clicking out of Painter.

2. No part of the image is lurking under the scroll bar.



5. Select the Brush tool. The variant should still be set to the Straight Cloner. Change it to Soft Cloner.

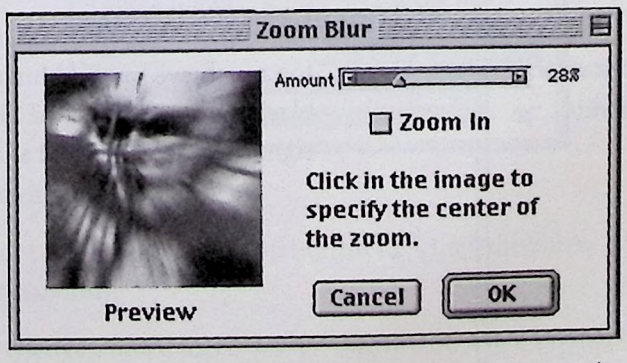
6. Control/Shift-click to sample the dark area of the background. Clone over the white horizontal line and the white vertical area. Patch it out entirely.

7. Select>All.

8. Option/Alt-click on the image with the Adjuster tool to float a copy of the quarterback.

9. Double-click on the Layer to access the Layer Attributes and rename it "Quarterback".

10. Choose Effects>Focus>Zoom Blur. Click on the player's face to pinpoint the center of the effect (on the picture — not in the Preview box). Set the slider to approximately 25 – 30%, then click OK.

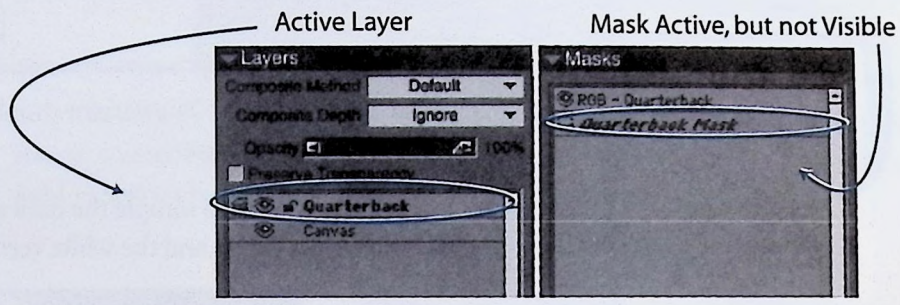


Zoom Blur is an intensive filter — be patient while it works.

11. Leave your work open for the next exercise.

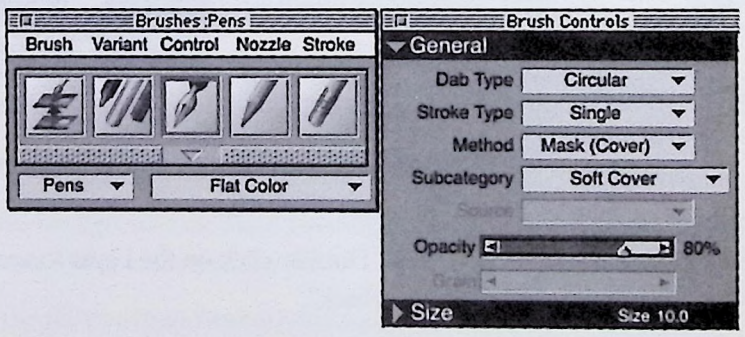
Masking to Blend Layers

1. Be certain that the Quarterback is active in the list.
2. Click on the Mask icon to access the Mask palette.
3. Click on the Quarterback mask to make it active. (Do not turn on the mask's visibility: keep the Eye icon closed.)



Visual summary of Steps 1-3

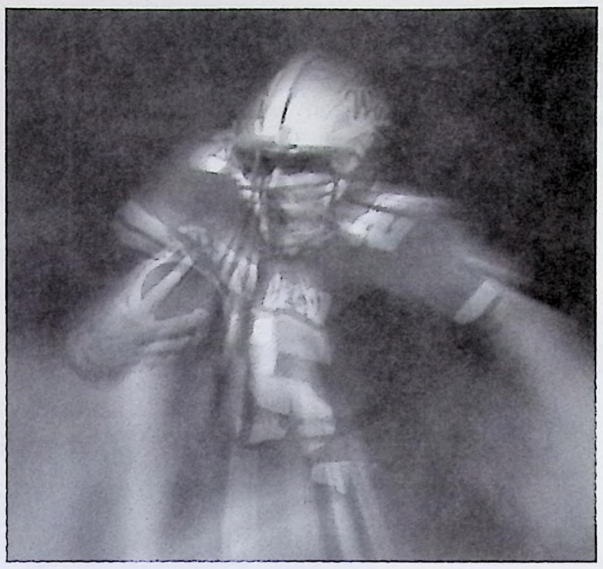
4. In the Brush palette, select the Pen tool. Choose the Flat Color variant and the Mask method. Set the brush parameters as shown below.



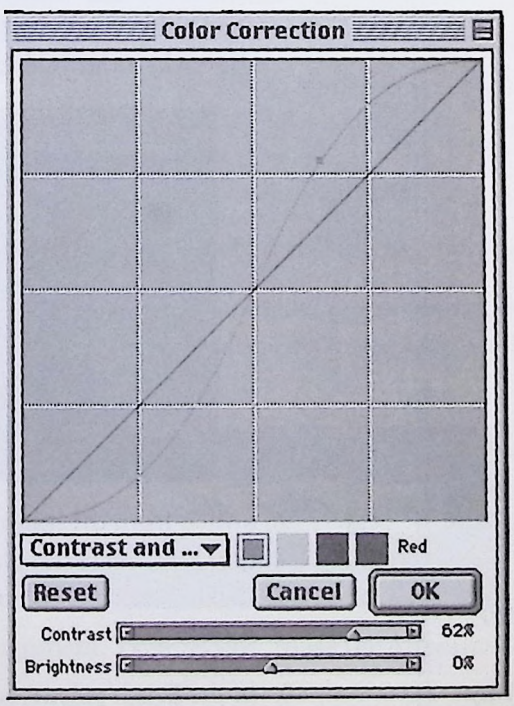
5. Because you are painting in the mask, the colors in the Color palette reflect this state. White paint completely reveals the imagery lying below the mask. Black covers up underlying imagery. Gray offers partial visibility. Choose gray.
6. Starting on the face, carefully paint back some of the player's features, but not too much; we want it blurred to show he is "speeding." Feel free to switch to black to recover with the blurred imagery. This is a process of finding just the right balance of blurred and sharp.

The keyboard shortcut for Surface Texture is Command/Control-Shift-S.

The keyboard shortcut for Equalize is Command/Control-E.



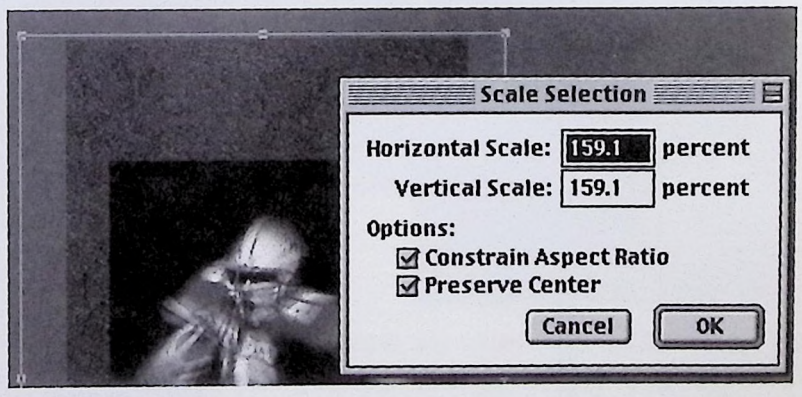
7. Select Effects>Tonal Control>Correct Colors. Select the red curve (tiny red box under the graph) and adjust the Contrast slider to the right to snap-up the contrast. (Try 65%.)



8. Click OK to accept the change.
9. In the Layer palette, click the Drop button to "glue" the blurry layer to the canvas permanently.
10. Save your changes. Since this is a TIFF document, when saving, the prompt appears asking for RGB or CMYK TIFF color space. Select RGB and click OK.

Combining Imagery

1. Open the **Final Football Poster.RIF** file from your **Work in Progress** folder.
2. Click on the Football.TIF image to make it active.
3. Display the Rulers. Select the Crop tool. Crop off 0.25″ from the left and 1″ from the right. Click inside the bounding box to accept the crop.
4. Choose Select>All.
5. Choose the Adjuster tool. While holding the Option/Alt key, drag the Football.TIF image onto the Final Football Poster.RIF.
6. Notice that the Football.TIF image is a layer in the list. Double-click on that layer in the list. In the text field in the Layer Attributes dialog box, rename it "Quarterback".
7. Center it with the Adjuster tool.
8. Choose Effects>Orientation>Scale. While the dialog box is on the screen, hold the Shift key and drag the bounding box by the corners to bleed over the edge of the background. Click OK to accept the scaling.



9. Switch from the list to the Mask list by clicking open the Mask section panel on the Objects palette. Make the mask active, but do not turn on its visibility by clicking the Eye icon open. (See illustration for Steps 1-3 in the previous exercise)
10. In the Brush palette, select the Pen tool and set it up as you did before with the Flat Color variant and the Mask method.
11. Choose a darkish gray in the Color Picker. (Remember, we are masking. Gray offers partial transparency.)
12. With a wide brush, softly erase part of the quarterback imagery so that the textured background shows through.
13. When you are satisfied with the results, choose Drop All from the Layer menu.

The keyboard shortcut for Correct Colors is Command/Control-Shift-K.

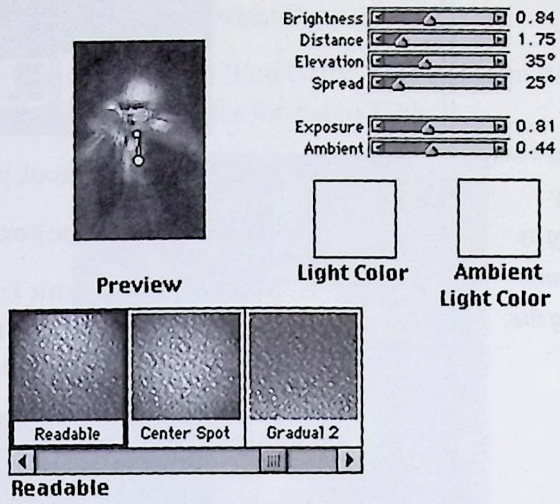
Hint for Step 12:

Painting with white (in the Masking method) completely removes the imagery; black completely restores imagery. Gray values are translucent. Vary the gray that you use to control opacity.

Start your stroke at the edge of the helmet and drag out to the picture's edge — radially, like spokes on a bike wheel. It will mesh with the zoom-blur effect.

Masks offer such freedom. Because they are endlessly editable, you can uncover imagery with white or cover up with black until the balance is perfect.

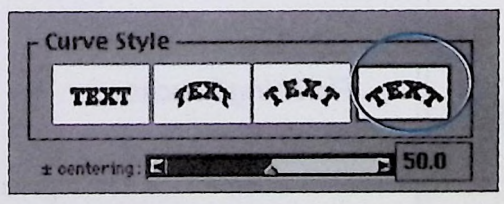
14. Choose Effects>Surface Control>Apply: Lighting. Set the sliders as shown below and choose the Readable light. Position the light as shown below. Click OK to apply the effect and to exit the dialog box.



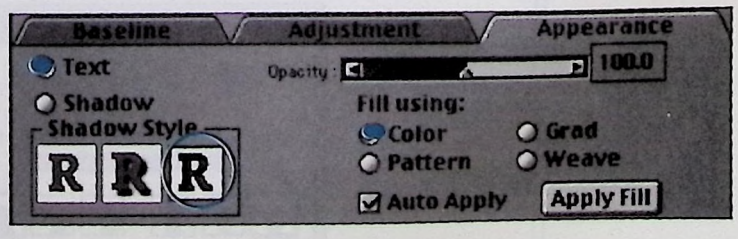
15. Save your document.

Setting the Type

1. Set bright red as the primary color in the Color palette.
2. Locate and select the Dynamic Text Layer. Click the Apply button
3. From the Font pull-down menu, choose ATC Monsoon. Click OK to exit this dialog and re-enter the main Dynamic Text dialog box. Set the Baseline to the Icon on the far right.



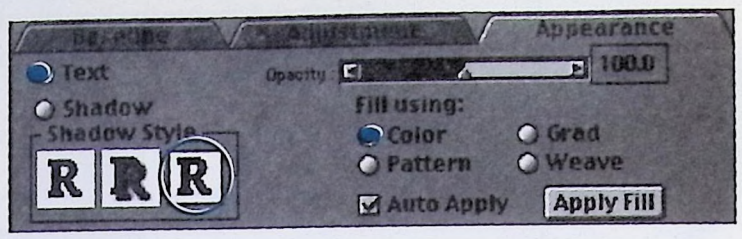
4. Select Center Alignment. Type "END". Make the Appearance settings look like the ones below.



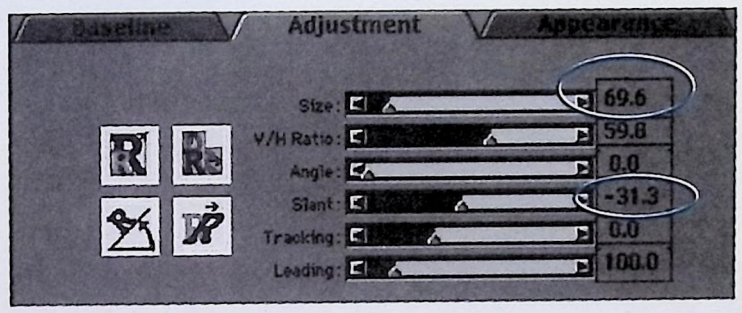
A light may be moved from its default position by clicking and dragging its larger end. Its direction is changed by dragging the smaller end.

Whenever there is a heavy outline around a "reply" button, press the Return/ Enter key.

5. Set the Type Adjustment sliders as shown in the illustration below.



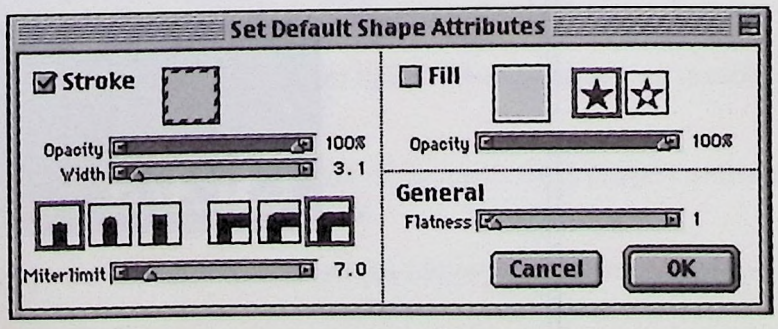
6. With the Position tool, place the word over the Quarterback's head (as above).
7. Click OK to exit the box and apply the type parameters.
8. Make a new Dynamic Layer and in the same font as before, type the word "Game". Choose the horizontal Baseline. Set the size and slant as indicated below. Position it a bit below the Quarterback's ball-carrying hand.



9. Click OK to exit the box and apply the type parameters.
10. In the Layer List, Select Drop All from the pop-out menu.
11. Choose the F/X brush, Fire variant. Using the default brush size, paint some flames near the words.
12. Save your document.

Finishing Touches

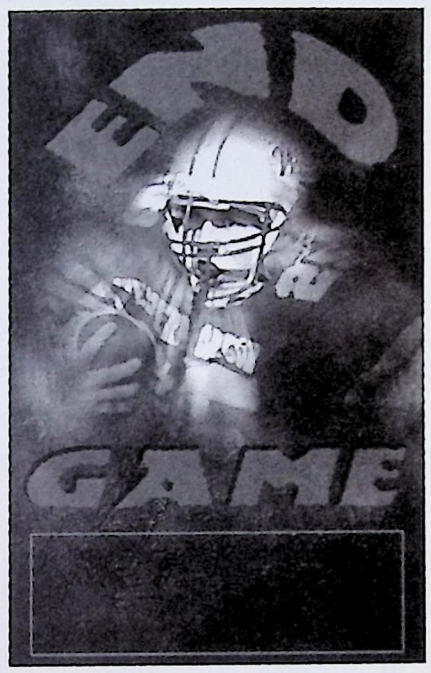
1. Select the Rectangular Shape tool. Choose Shapes>Set Shape Attributes. Set up the shape parameters as shown below. Set the stroke color to a very light peach/ off-white. Click OK to accept the settings and to exit the dialog box.



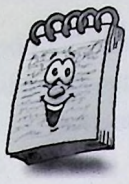
Be certain that all adjustments are made to a dynamic layer before committing to a regular pixel-based layer. The dynamic characteristics are not available to regular layers.

The keyboard shortcut for Set Shape Attributes is Command/Control-[.

2. Drag out a horizontal rectangle at the bottom of the poster. This box is for the movie credits, which will be supplied at a later time by the copy editors. Graphically speaking, it adds visual "weight" to the poster's balance.
3. From the Layer pop-out menu, select Drop All.
4. Select Save As and name the file "End Game.TIF" into your **Work in Progress** folder. Be certain to change the file format to TIFF.



Final End Game Movie Poster.

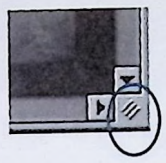


Notes:

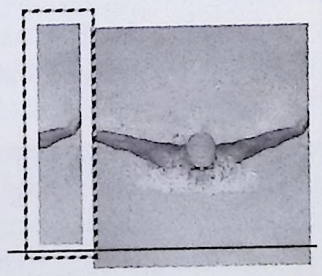
Project C: Swim Meet Today Banner

Creating Imagery by Duplication

1. Open the **Single Swimmer.TIF** file from the **SF-Painter** folder.
2. Drag out from the bottom right on the document to show a narrow band of gray surrounding your image.

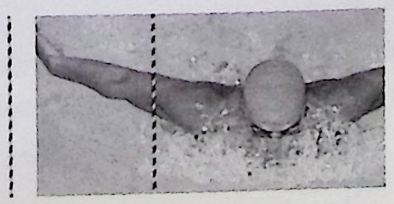


3. Select Canvas>Canvas Size. Add 100 pixels to the left side of the canvas. Be certain that the entire image, including the newly-added canvas, is on the screen.
4. With the Rectangular Selection tool, create a vertical slice of the water and the swimmer's complete hand. (We will create a new forearm to replace the one that is cropped off.)
5. With the Adjuster tool, Option/Alt-click within the selection. This creates a duplicate layer copy of the water and arm.
6. With the Adjuster tool, move it to the other side of the swimmer.



Use the Arrow keys to move Layers in 1-pixel increments.

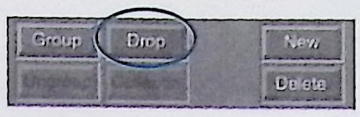
7. Choose Effects>Orientation>Flip Horizontal.
8. Move the forearm into place. Check your position by clicking with the Magnifier tool to verify the alignment.
9. Choose Effects>Tonal Control>Brightness/Contrast. Move the sliders to the left a bit to improve the color and value match.



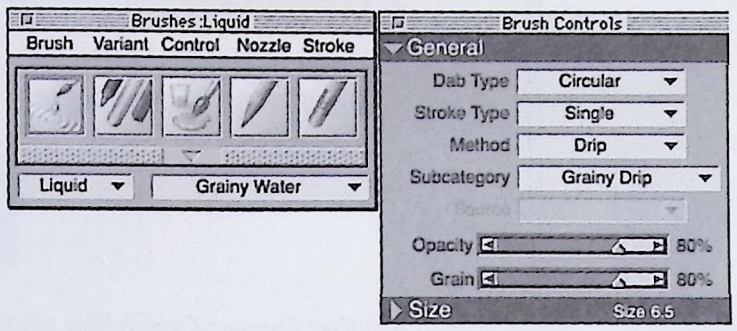
Get it close — it will not line up exactly.

Use short circular strokes to mimic the waves in the water.

10. Select the Adjuster tool again and line it up. Click the Drop button on the bottom of the Layer palette.



11. Select the Liquid brush and set it up as shown below.

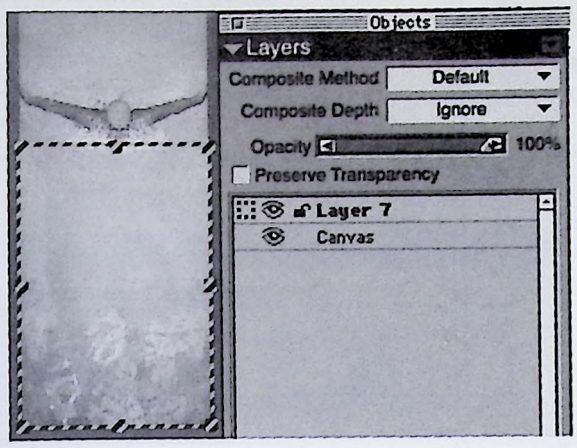


12. "Smear" over the line in the water where the two layers don't match up. It takes very little effort to make the seam disappear. Take care when blending the swimmer's arm!

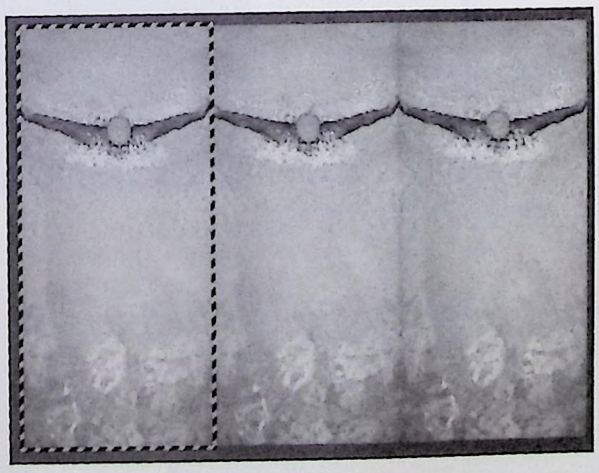
13. Select Save As and save the file as "Swim Meet Banner.RIF " into your **Work in Progress** folder.

Making and Using Multiple Images

1. Crop off any white area on the left side of the picture. There may be a small slice of white beneath the section we copied, crop it off, too.
2. Choose Canvas>Canvas Size. Add 250 pixels to the bottom.
3. With the Rectangular Selection tool, select the water beneath the swimmer.
4. Choose Select>Float. The water will become a layer in the layer list.
5. Choose Effects>Orientation>Free Transform. Notice how it becomes a Reference Layer in the layer list. Switch to the Adjuster tool, and drag it down by a corner node to cover the white canvas. See the following illustration.



6. Click the Drop button on the bottom of the Layer palette.
7. With the same Liquid brush as you used in Step 11, smooth out any telltale lines in the water from the patch job.
8. Select>All, then option-click within the selection area to float a copy of this swimmer and water. (Windows-based users: Control/Shift-click.) Click twice. We want three swimmers. (Look in the layer list to be certain that there are two layers plus a canvas.)
9. Make the Canvas the active layer in the layer list. Choose Canvas>Canvas Size. Triple the canvas width by adding the width listed to both the right and the left sides of the canvas. (In this case, 315 pixels: your size may be different, depending on how you cropped the image.)
10. Move one of the floaters to the left and the other to the right of the center "base" swimmer. Line them up using the Arrow keys to get the seam perfect.



11. When you are satisfied with the alignment, select Drop All from the Layer pop-out menu on the Layer palette.
12. Save your work.

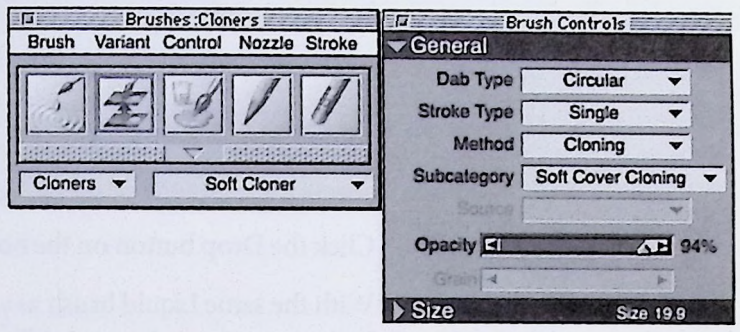
The keyboard shortcut for the Rectangular Selection Tool is "R."

The keyboard shortcut for the Adjuster tool is "F."

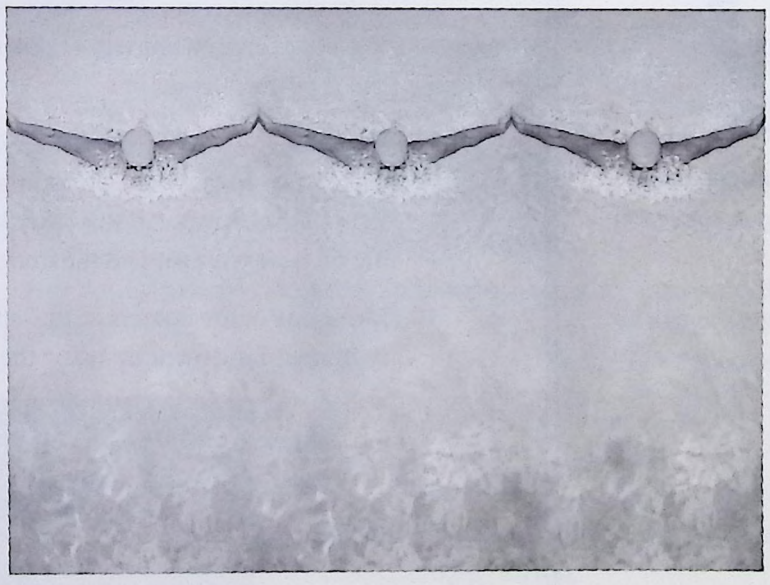
The secret of a good "patch job" is varying the source point.

Further Image Manipulation Using Cloners and Layers

1. Select the Cloner brush. Choose Soft Cloner. Control/Shift-click to select the source point for a patch job to clean up the seams. Fix any telltale lines in the water. The setup shown below works well for most of this job. (The Brush size is approximately 20.)



2. Now change your brush to a much larger size, lower the Opacity and "Puff" large, faint dabs of imagery to further camouflage the triple copies.



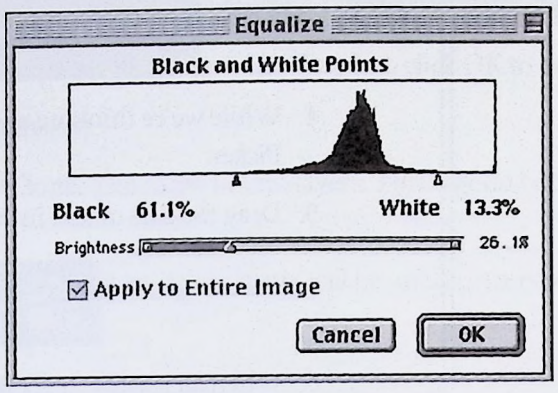
3. Save your document.
4. Choose Canvas>Canvas size. Double the canvas size by reading the pixel width in this dialog box and adding that number of pixels to the right side of the image. Click OK to exit the dialog box.
5. Select the water and swimmers with the Rectangular selection tool. (The whole image except the new white canvas.) Option/Alt-click with the Adjuster tool to create a new, duplicate layer.

The keyboard shortcut for Equalize is Command/ Control-E.

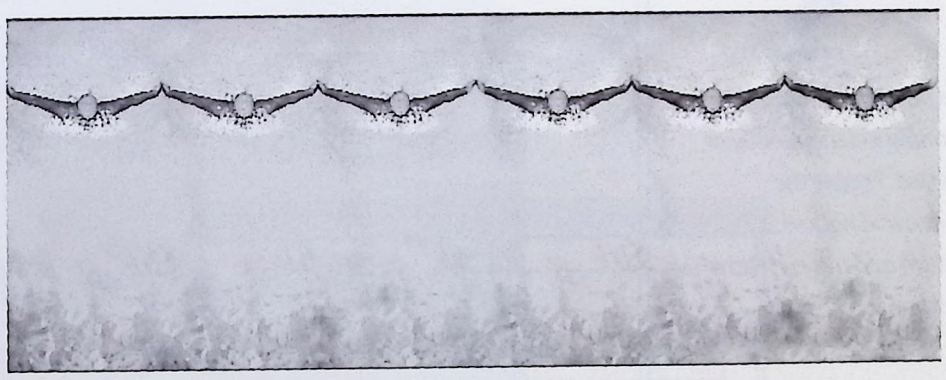
Click "B" to select the brush quickly.

Alternately, choose Apply from the Dynamic Layers Pop-out menu.

6. Move this copy over to the right with the Adjuster tool. When it is in place, click the Drop button.
7. The Soft Cloner is still set up, so just select the Brush tool and fix this seam using the same technique as before.
8. Choose Effects>Tonal Controls>Equalize. Set the slider to match the one shown in the illustration below and click OK.

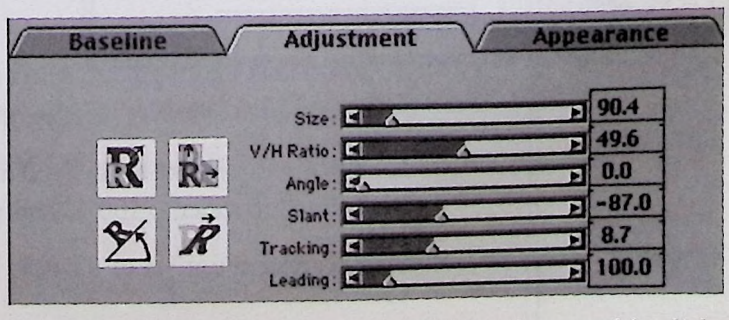


9. Save the document. Now there are six swimmers for the basis of the banner.



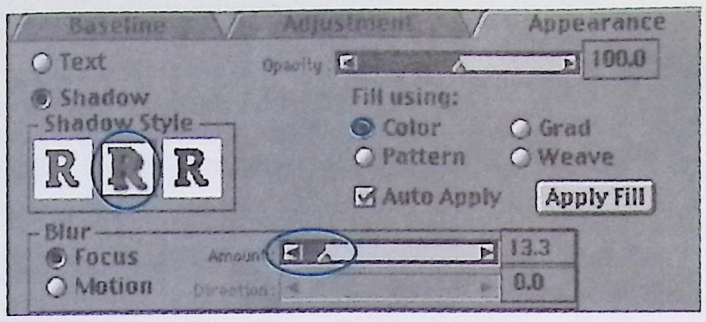
Preparing the Type

1. Select Dynamic Text from the Dynamic Layers palette. Click the Apply button. Choose ATC Nassau, Center Alignment. Set the Adjustment tab to the settings shown in the following dialog box.



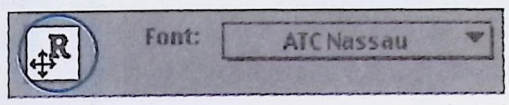
2. Type "SWIM MEET TODAY!" in the text field at the top of the dialog box.

3. Go to the Appearance tab and choose these settings.



4. While we're thinking about type color, choose a clear blue from the Color Picker.

5. Drag the line of text into position as shown below. Use the Position tool.



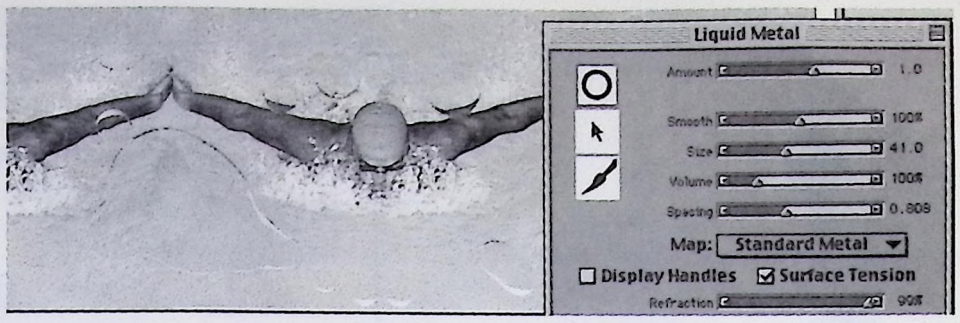
6. When all is well, click OK to exit the dialog box. Your picture should look like this.

7. With the Dynamic Layer active in the layer list, click the Drop button. Save your document.

It is possible to move the shadow independently of the text. Enable the Shadow>Shadow Style button and move it with the Position tool.

Finishing Touches

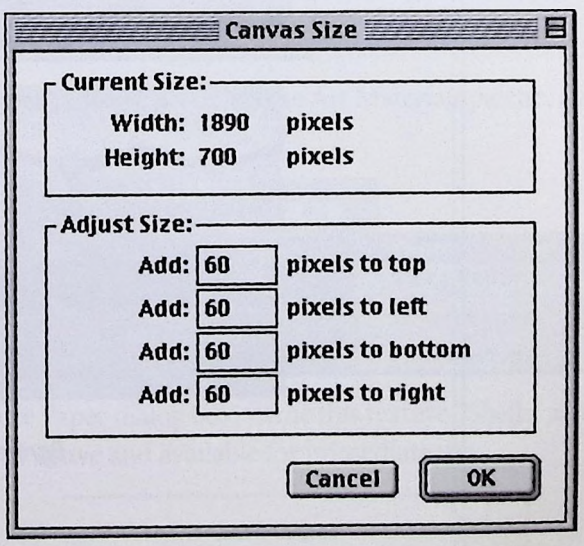
1. From the Objects palette, select the Dynamic Layer palette. From the drawer, select Liquid Metal. Click the Apply button.
2. Use the Circle tool to drag out droplets. The default settings are good. Move the Refraction slider to 100%. This will make the droplets look like beads of water.
3. Experiment until your droplets look like water running down a pane of glass.



4. When you are satisfied with the water droplets, click OK to exit the dialog box.
5. Save your document.
6. Choose File>Clone. The clone has no layers. This is good because we need it to be collapsed.
7. Close the original version. All its layers will be safely preserved.

Using Quick Warp

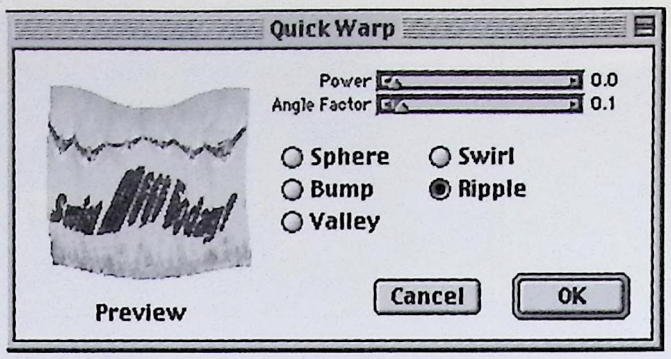
1. Reselect the Clone.
2. Choose Canvas>Canvas size.
3. Add 60 pixels to every dimension.



4. Choose Effects>Surface Controls>Quick Warp.
5. Check the Ripple button.

To return to the last Effects dialog box, click Command/Control-/.

Another way to access the dialog box for the last effect used is to click Command/Control -/.

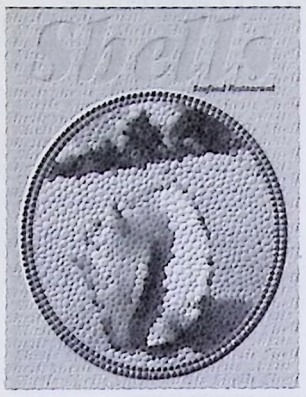


6. Leave the Power slider at 0. Very carefully move the Angle Factor slider to the right. Watch the Preview box. We are looking for a slight ripple, as if the banner were waving in a variable breeze. Try settings between 0.0 and 0.1.

7. If you like this effect, name it "Warped Swim Meet Banner.RIF" and save. If not, choose Edit>Undo and save. Leave its name "Clone of Swim Meet Banner.RIF."

Banner with and without Quick Warp.

Project D: Shells Restaurant Menu Cover

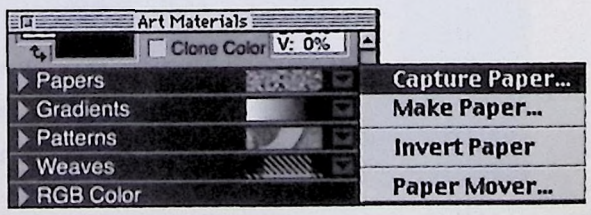


Creating the Background Texture

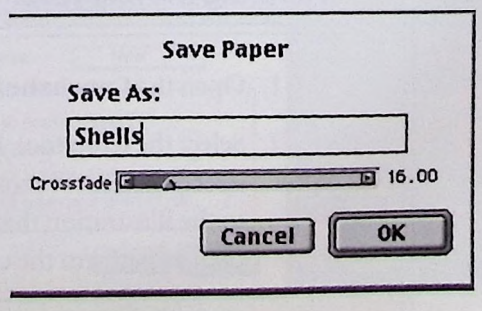
1. Create a new document 8.5″ × 11″ at 72 ppi. Choose a light ivory for your paper color.
2. In the Art Materials palette, set the color to black.
3. Select the Text tool and in the Control palette and choose the ATC Island Extra Bold Italic font. Set the Point Size slider to 36 points.
4. Place your cursor on the document and type the Word "Shells" several times on two different lines. Try to stagger the spacing between words. Examine the illustration in Step 6 as an example.
5. In the layer list, there should be many layers, each with a letter. They should all be active. Go to the Layer pop-out menu and choose Drop All.
6. Choose the Rectangular Selection tool and drag a marquee around the words.

The keyboard shortcut to display the Layer palette is Command/Control-4.

7. From the Paper pop-out menu on the Art Materials palette, choose Capture Paper.



8. In the Capture Paper dialog box, name this texture "Shells" and click OK. The texture is now active and available for immediate use.

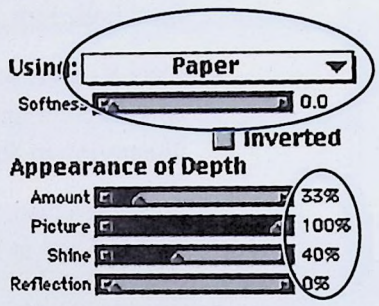


The keyboard shortcut for the Rectangular Selection tool is "R."

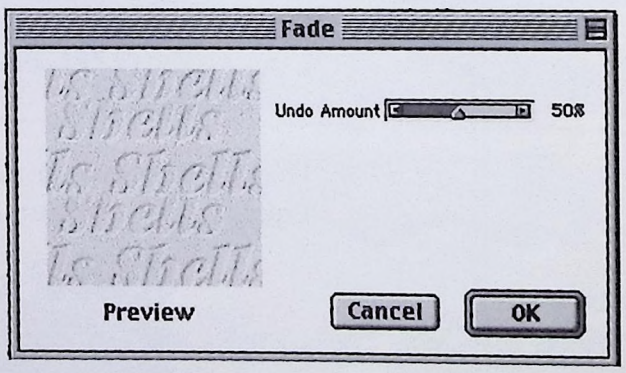
The keyboard shortcut to display the Objects palette is Command/Control-4.

The keyboard shortcut to display the Art Materials palette is Command/Control-3.

9. Click the Delete/Backspace key to clear the selected words. (We no longer need them since they are safely stored as a Paper texture.) You should now have an empty canvas with no selection marquee and no shells.
10. Choose Effects>Surface Control>Apply Surface Texture.
11. Select Paper from the Using pop-up menu. Your Captured Paper texture is already selected and will appear in the dialog box's Preview window.
12. Set the other sliders as shown below, or if you are feeling adventurous, set them differently. Check your settings in the Preview window. Click OK to exit the dialog box.



13. If you find the effect too strong, choose Edit>Fade and adjust the slider to improve the effect.



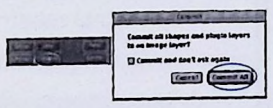
14. Save this file as "Menu Background.RIF" into the **Work in Progress** folder and close the document.

The shortcut for Surface Texture is Command/Control-Shift-S.

Preparing the Image for Tessellation

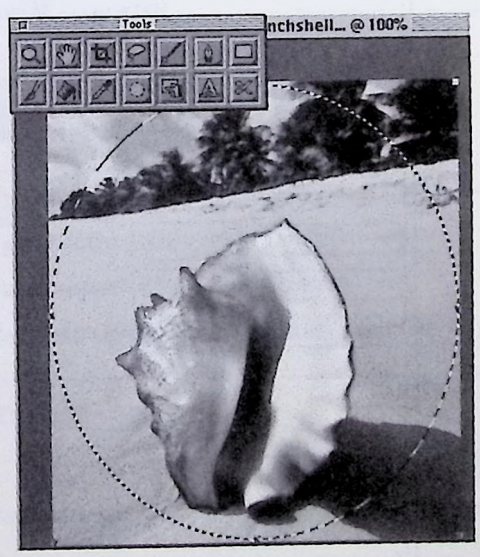
1. Open the **Conchshell.TIF** file from the **SF-Painter** folder.
2. Select the Crop tool. Excluding the person in the background, drag out a square selection. Remove some from the right, too. When your selection looks similar to the illustration that follows, place your cursor inside the selected area and click to perform the crop.

Hint for Step 5: The keyboard shortcut for the Selection Adjuster is "S."

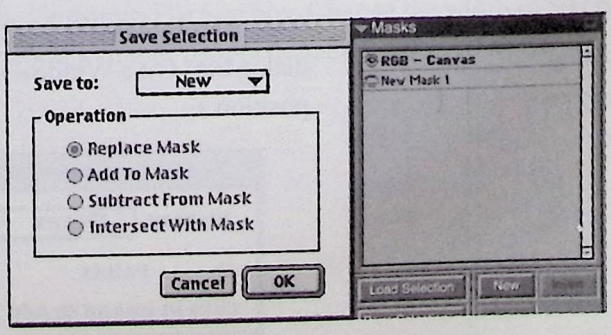


The Selection Adjuster tool

3. Select File>Clone. We will work on the clone of the conch shell for the remainder of the exercise.
4. Select the shell and some of the sand and trees with the Oval Selection tool. It does not have to be perfect.
5. Choose the Selection Adjuster tool. Drag on the control handle to re-size the oval selection. See the example below.



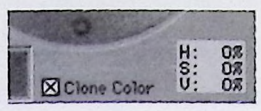
6. Choose Select>Save Selection. In the ensuing Save Selection dialog box, simply click OK. The oval selection will appear as New Mask 1 in the mask list.



7. Once the selection is saved into a mask, it is safe to deselect it. Choose Select>None. Leave the document open for the next exercise.

Using Clone Color to Create a Tessellation

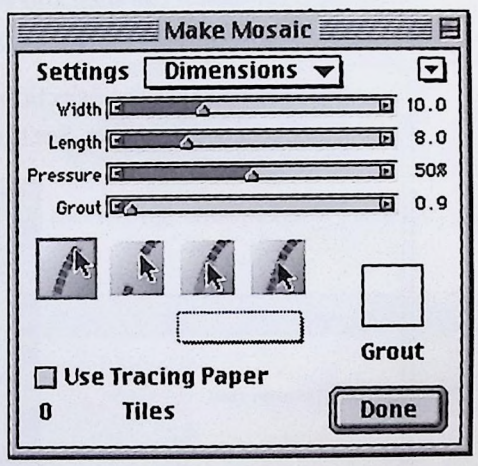
1. In the Color palette, check the Clone Color box.



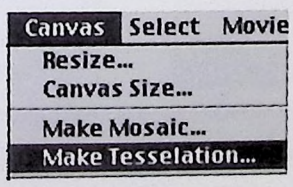
2. Select Canvas>Make Mosaic.

3. In the Make Mosaic dialog box, choose Dimensions from the Settings pop-up menu. Set your grout thickness to a rather low setting. Try "0.9." Leave the grout color white. If you wish to turn on the Tracing Paper, do so now. (If not, expect the picture to be covered with grout and seemingly disappear.) Click the Done button to exit the dialog box.

The keyboard shortcut for Deselect is Command/ Control-D.



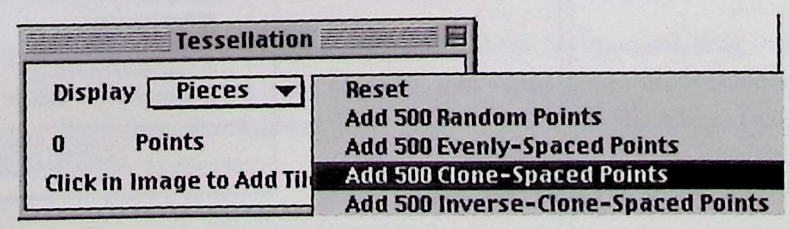
4. Select Canvas>Make Tessellation.



There is a known Tracing Paper bug. It involves enabling Tracing Paper and no appearance of an image-ghost. Restarting Painter usually straightens it out immediately.

5. In the Tessellation dialog box, select Pieces from the Display pop-out menu. Choose Add 500 Clone-Spaced Points from the Add Points pop-up menu.

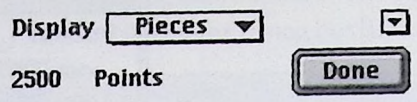
   (On a Macintosh it is a little box with an arrow on it toward the top right of the dialog box. On a Windows-based system, it is a little white box in the same position.)



Clone-Spaced points base the placement of the points on the luminance of the clone source. Dark areas have fewer points assigned to them, which means larger tiles. Lighter areas receive fewer points, and, therefore, appear airier.

The shortcut key for Fill is Command/Control-F.

6. Add 500 Clone-Spaced points four more times. Watch the point total on the dialog box until it reaches 2,500. Click the Done button. Leave your work open for the next bit.

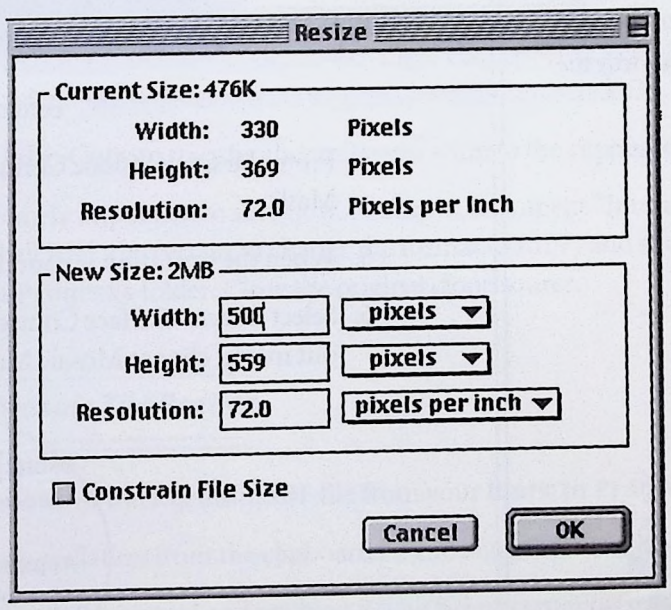


Resizing Vector Art and its Clone Source

It probably will take a short time to render the tiles. The Tessellation is too small for the menu cover, so we will take advantage of Painter's vector-based functionality and re-render it at a larger size.

Re-rendering the Tessellation

1. Choose Canvas>Resize.

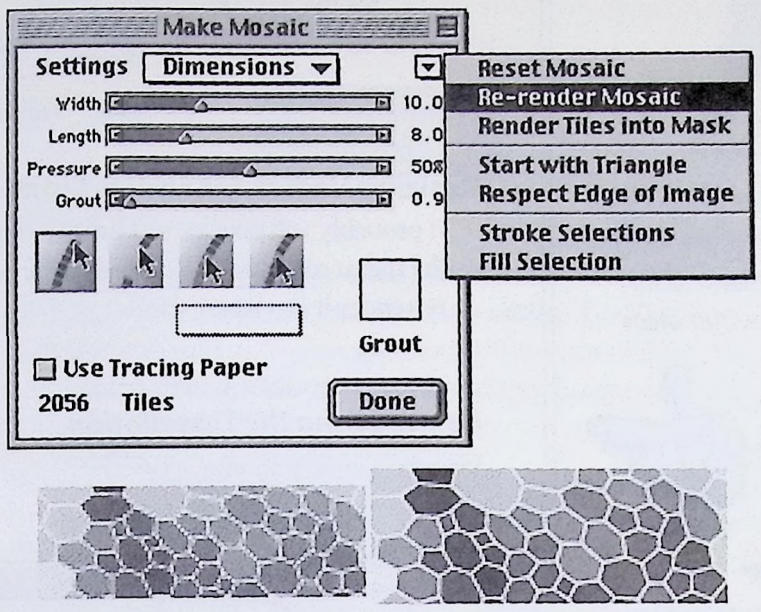


(Note: Your values may not match those shown above — we originally made this picture squarish; not perfectly square.)

2. Deselect the Constrain File Size box. Change the width to 500 pixels. The height will automatically change proportionally. Click OK to exit.

Clone source and clone relationships can be used only if they are exactly the same size.

3. Choose Make Mosaic from the Canvas menu. Go directly to the Mosaic Commands pop-up menu. Choose Re-render Mosaic.

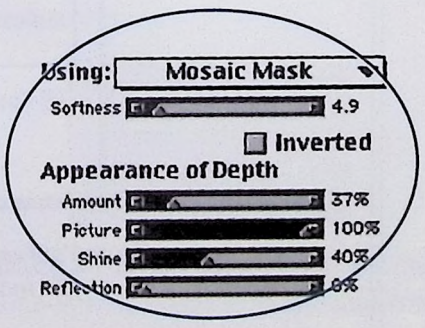


Before and after Re-rendering.

4. From the same Mosaic Commands pop-out menu, choose Render Tiles into Mask.

5. When the operation is complete, click Done to exit the dialog box.

6. Select Effects>Surface Controls>Apply Surface Texture. From the Using pop-out menu, choose Mosaic Mask. Set the sliders as shown below and click OK.



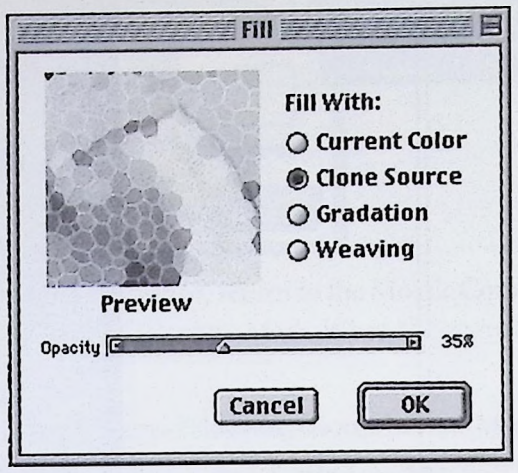
The keyboard shortcut for Tracing Paper is Command/Control-T.

7. Click on the **Conchshell.TIF** (the clone source) and make it match the re-rendered clone size by choosing Canvas>Resize. In the Resize dialog box, deselect the Constrain File Size box, make the width 500 pixels, and let the height fall proportionately. Click OK to resize and exit.

8. Click the Tracing Paper Toggle on the right edge of the clone document to give you an idea of how the picture would look if it had a bit more image detail.

9. Toggle on and off a few times to see the difference. Sometimes, tessellations are good at this point. Other times, some detail is helpful.

10. Select Effects>Fill. In the Fill dialog box, choose Clone Source and set the Opacity slider to about 25%. Click OK to exit the dialog box and apply the effect.



11. If the Selection Oval is not loaded at this time, choose Select>Load Selection. In the dialog box, the Replace Selection (default) is chosen. Click OK.

12. Choose Edit>Copy to transfer the oval tessellation to the clipboard for later use.

13. It is extremely important to save now. Name the document "Interim Conchshell.RIF" (be certain to change the format to RIFF) and save it in your **Work in Progress** folder. Close the original clone source.

The keyboard shortcut for Paste is Command/ Control-V.

Creating the Mosaic Tile Border

1. Open the **Menu Background.RIF** file from your **Work in Progress** folder.

2. Paste the tessellation from the clipboard by choosing Edit>Paste.

3. Choose the Adjuster tool and position it a bit below center on the Menu Cover.

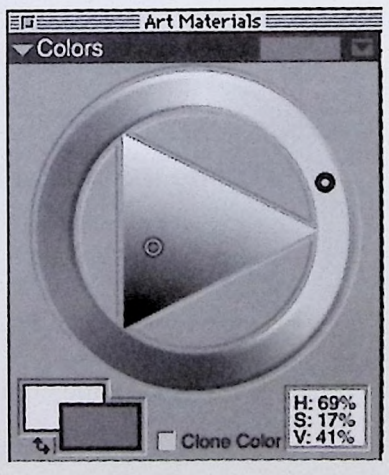
4. Click on the Canvas in the layer list to make it the active layer.

5. Choose the Oval Selection tool and drag out an oval selection slightly larger than the tessellation.

6. Switch to the Selector Adjuster tool and when the control handles appear, manipulate the selection so it is slightly larger than, and centered around, the tessellation. This will contain the mosaic tiles for the border.

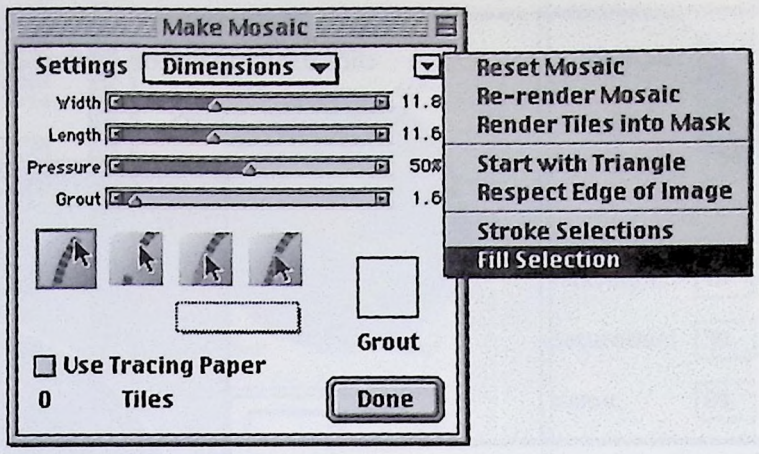
Transforming the pixel-based selection's size automatically changes the selection to a path-based area capable of containing mosaics.

7. If the Clone Color box is still checked on the Color palette, uncheck it. Choose a dark forest green from the Color palette.



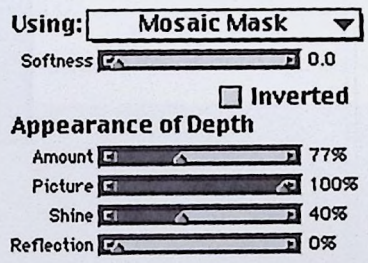
8. Select Make Mosaic from the Canvas menu. Select the Dimensions pop-out menu, and set the sliders to approximately the same dimensions as those shown in the following illustration. Set your grout color to off-white. Choose Fill Selection from the Mosaic Commands pop-out menu. The tile counter will calculate the number of tiles it adds within the selection.

Don't panic when the Shells background texture disappears beneath the grout. It is easy to reapply after the border tiles are set.



9. When the tile counter is finished, return to the Mosaic Commands pop-out menu and choose Render Tiles into Mask. When the operation is finished, click Done.

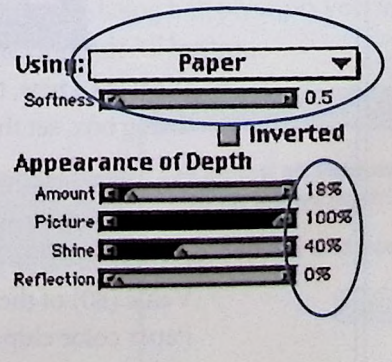
10. Re-enter the Surface Texture dialog box, choose Mosaic Mask from the Using pop-out menu. Set the sliders as shown below. Click OK to accept the effect and to exit the dialog box.



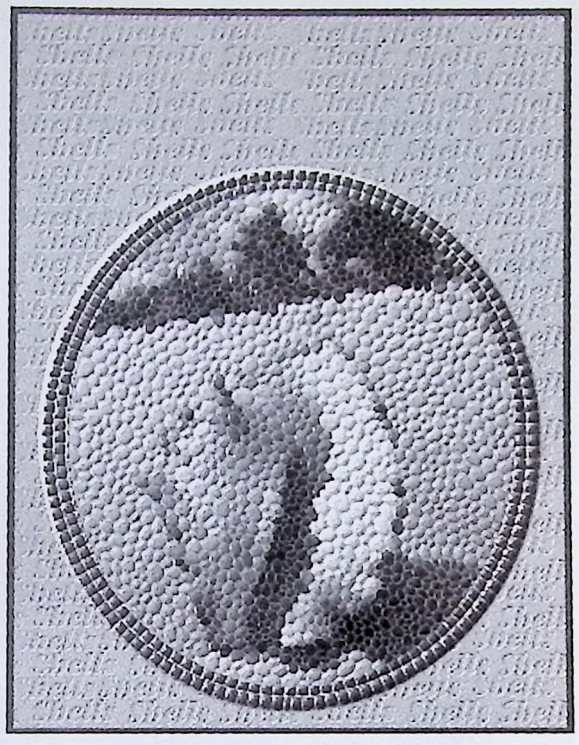
Finishing Touches for the Menu Background

1. With the Magic Wand tool, select the Ivory paper.

2. Return to the Apply Surface Texture dialog box and choose Paper from the Using pop-up menu. Adjust the sliders as shown below and click OK. The paper texture returns.



3. In the layer list, select the layer. Choose Drop from the Layer Pop-out menu, or click the Drop button on the bottom of the Layer palette.
4. Save your changes.

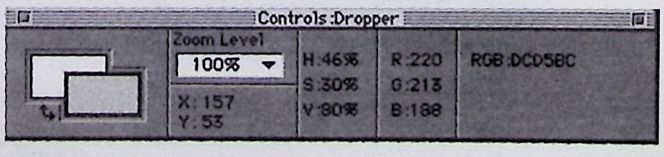


The Menu Cover at this stage in its development.

Setting the Text: "Shells"

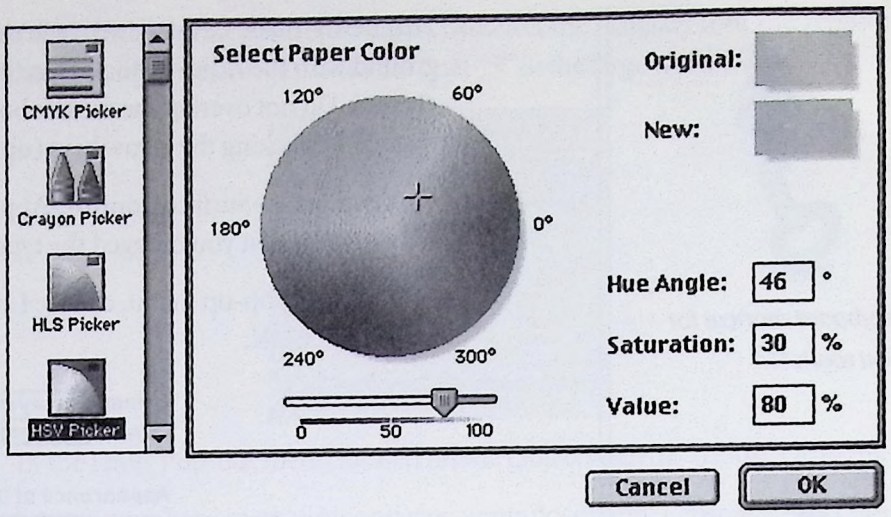
Hint for Step 4: Don't be too picky. We are simply looking for a beige tone here. If you prefer a warmer or darker value of beige, by all means, choose that color.

1. Select the Dropper and sample the ivory color on the menu background.
2. Notice that the numeric representation for those colors appear on the Control palette.



3. We need a new, temporary canvas to create the text. Choose File>New. In the dialog box, set the dimensions to 600 × 400 pixels at 72 ppi.
4. On a Macintosh, click on the Paper color chip and select the HSV Color model from the choices on the left side of the dialog box. Type the numbers in the respective value fields which correspond to each: Hue (46), Saturation (30), and Value (80) of the beige tone you want. On a Windows-based system, click on the Paper color chip and simply enter the numbers in the H, S, and Lum. text fields at the bottom of the Color Picker. *(Note: Value is the same as Luminance.)*

The keyboard shortcut for the Dropper is "D."

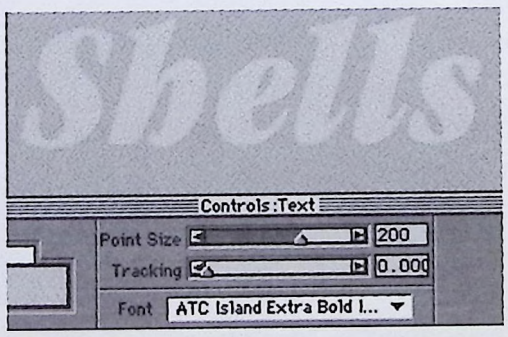


The Macintosh HSV Paper Color Picker.

5. Click OK to exit the Color dialog box. When you are sent back to the New Document dialog box, click OK again.

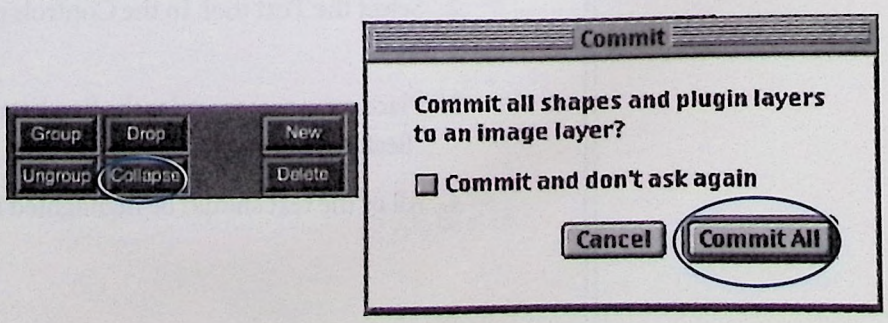
6. Select the Text tool. On the Controls palette, select Island Extra Bold Italic as the font, and set the size to 200.

7. Insert your cursor at the middle left of the beige file and type the word "Shells."



8. All characters will be independent Shape layers in the layer list. They should all be selected (highlighted). If they are not, shift-click them all to select the entire word.

9. Click the Group button at the bottom of the layer list, and then click the Collapse button. When the dialog box prompts you to commit all shapes to an Image layer. Click the Commit All button.



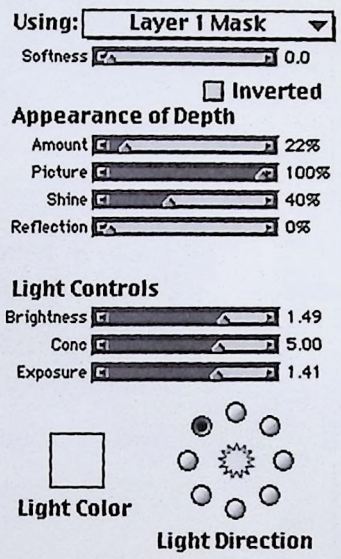
The keyboard shortcut for the Text tool is "T."

For Step 12, look in the Preview box to see if the lighting on the large "Shells" matches and blends well with the existing background Shells paper texture. Your optimum settings may differ from the ones in the illustration.

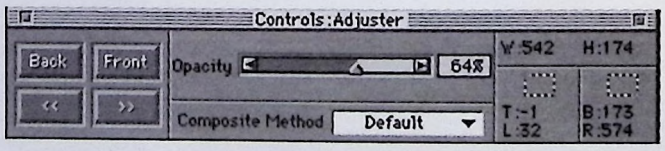
10. This newly-made Group is active in the layer list. Drag it into the menu background with the Adjuster tool. Place it at the center-top of the menu background. Do not overlap the mosaic border. If its placement needs to be adjusted, move it by clicking the arrow keys (up, right, left, and down).

11. Choose Effects>Surface Control>Apply Surface Texture. (The type's mask was transferred when you dragged the type from one document to another.)

12. In the Using pop-up menu, choose Layer 1 Mask. Set the sliders as shown below. Click OK.



13. In the Controls palette, lower the opacity of this layer to 64%.



14. Leave your work open.

Setting the Text: "Seafood Restaurant"

1. Select the Dropper tool and sample a dark green from the border tiles.

2. Select the Text tool. In the Controls palette, the font is chosen. Set the Size slider to 20.

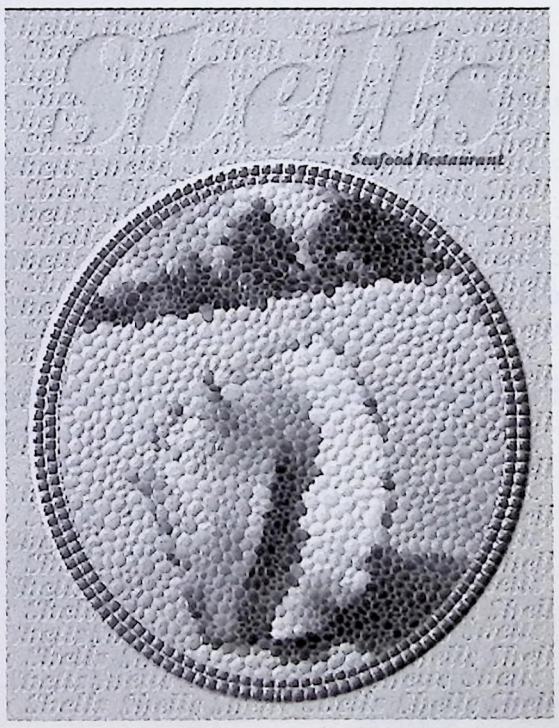
3. Place your cursor under the first letter "l" in the large word "Shells." Type "Seafood Restaurant".

4. All of the text should be highlighted in the layer list. Click the Group button.

5. If the words are not positioned correctly, select the Adjuster tool and reposition them to align "flush-right" with the final "S" in the large word "Shells."

6. In the Layer Pop-out menu located on the Objects palette, choose Drop All.

7. Admire your hard work! Save and close your document. Close any other open documents without saving changes.



Final Shells Menu Cover.

The keyboard shortcut for the Surface Texture is Command/Control-Shift-S.

Notes:

Do not use the Tracing Paper at all for the creation of this movie. Instead, watch the movie grow from the Frame Stacks palette.

Project E: Arrive Alive Public Service Announcement

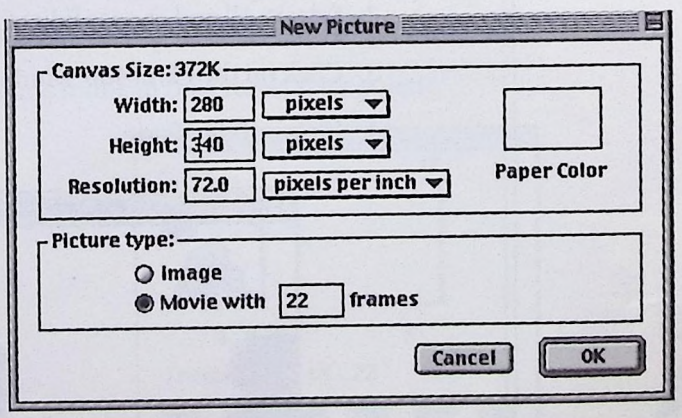
Painter's animation feature widens the horizon for graphic designers and commercial artists as it increases the options available for design. The industry used to be very compartmentalized; clients approached a designer for print work, an animation house for film or animation, and a computer specialist for designing Web pages. This is no longer the case. With Painter, one artist can create animations for use as a presentation clip, or as an animated GIF suitable for a Web site.

Animations: Sequences of Repeated Steps

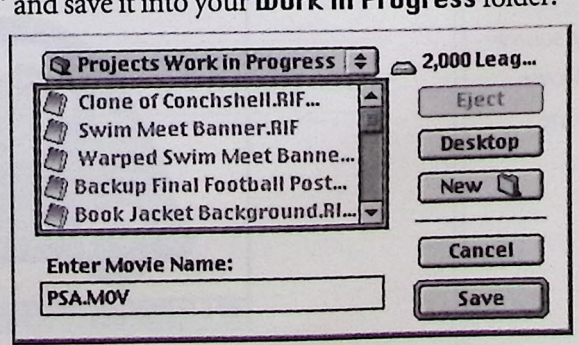
Creating interesting animations requires the methodical repetition of a series of steps. The written explanation of this sequence may be tedious to follow. The steps that follow are clearly defined and are abbreviated as you will become more familiar with them.

Setting up the Files

1. Open the folder **PSA Car Crash Frames** folder from the **SF-Painter** folder.
2. From this folder, open **cc01.TIF**. Choose Canvas>Resize and note the exact width, height, and resolution of the file.
4. Select File>New. Set the width to the dimensions as noted above: 280 pixels wide by 340 pixels high at 72 ppi. Set the Paper Color to white. For Picture Type, choose the "Movie with" radio button. Use 22 frames. Click OK to exit.



5. You are immediately prompted to name your movie and save it. Name it "PSA.MOV" and save it into your **Work in Progress** folder.

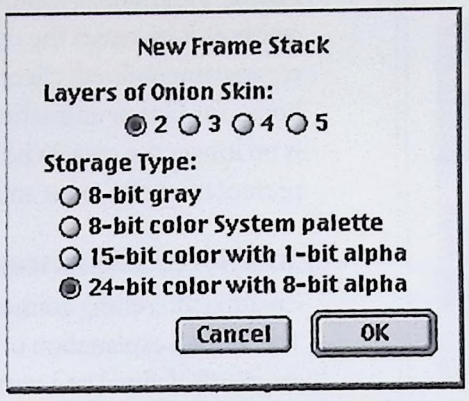


The keyboard shortcut for the complete sequence of Steps 2 - 4 is...

Macintosh:
Command-A, Command-C, click on other document, Command-V.

Windows:
Control-A, Control-C, click on other document, Control-V.

6. You will be prompted to choose the number of Onion Skin layers and the Storage type. Choose 2 layers of Onion Skin and 24-bit color with an 8-bit alpha (mask), then click OK.



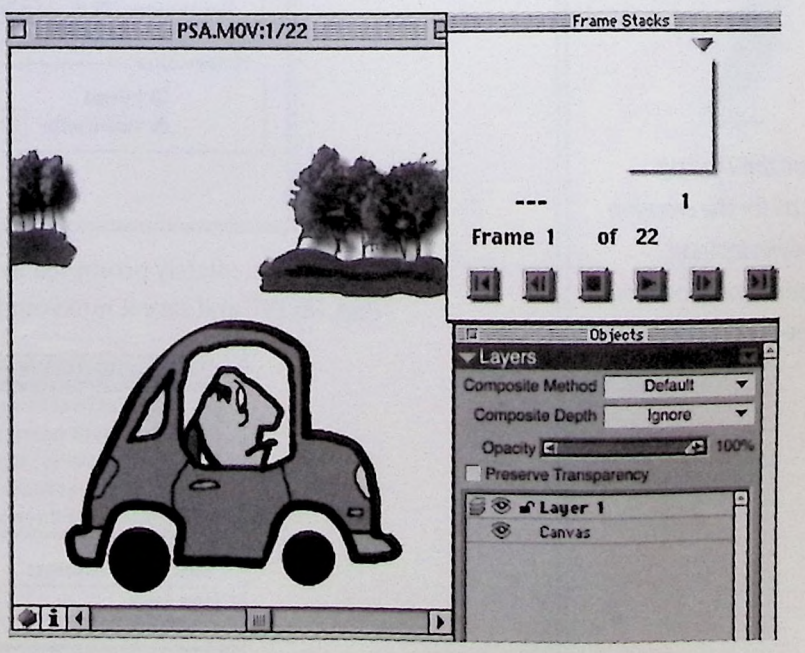
7. The Frame Stacks palette will appear with a blank Image window for creating the movie.

8. If the Objects palette (containing the Layer palette you'll be needing) is not open, choose Window>Show Objects.

Creating a Movie

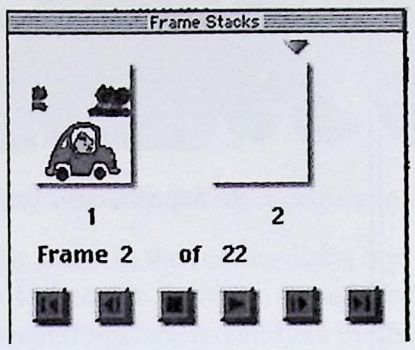
1. Click on the **cc01.TIF** file to make it the active file.
2. Select>All and choose Edit>Copy.
3. Click on the **PSA.MOV** window to make it the active document.
4. Choose Edit>Paste.

You can copy to the clipboard or drag the source file directly into the Movie Image window with the Adjuster tool.



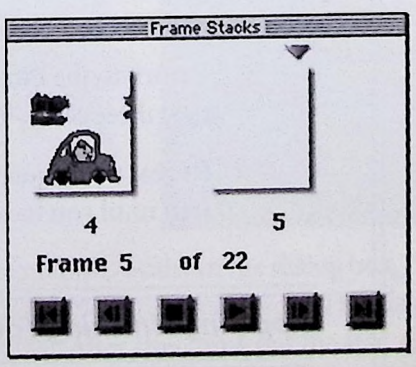
Notice that the car and driver look the same — the relationship of the car to the background has changed to simulate motion.

5. Click the Drop button at the bottom of the layer list.
6. Advance one frame in the Frame Stacks palette.



Repeating the Sequence for Frame cc02.TIF

1. Return to the **PSA Car Crash** folder in the **SF-Painter** folder and open the next three cells — **cc02.TIF**, **cc03.TIF**, and **cc04.TIF**.
2. Click on **cc02.TIF**.
3. Select>All and choose Edit>Copy.
4. Click on the **PSA.MOV** window to make it the active document.
5. Choose Edit>Paste.
6. Click the Drop button at the bottom of the layer list.
7. Advance one frame in the Frame Stack palette.

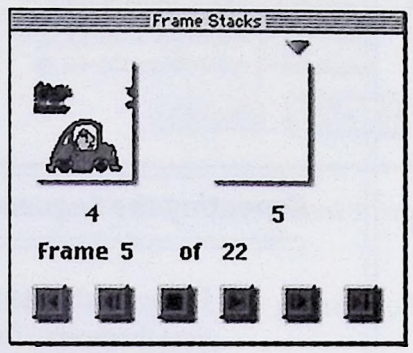


Repeating the Sequence for the Next Frames

1. Click on **cc03.TIF**.
2. Select>All.
3. Choose Edit>Copy.

Check your work every few frames to see how the movie is coming along. Don't get ahead of yourself.

4. Click on the PSA.MOV window to make it the active document.
5. Choose Edit>Paste.
6. Click the Drop button at the bottom of the layer list.
7. Advance one frame in the Frame Stack palette.
8. Click on **cc04.TIF**.
9. Repeat steps 2 through 7 above.



9. Close all the used cels without saving any changes.
10. Play your movie to be certain that it works.
11. Rewind it and que it up by advancing until Frame 5 is the active Image window. The Frame Stack palette should, once again, look like the illustration shown above.

Animating the Remaining Cels

1. Return to the **Car Crash** folder in your **Work in Progress** folder and open the next three cels — **cc05.TIF**, **cc06.TIF**, and **cc07.TIF**.
2. Repeat this sequence of steps (opening, copying, pasting, dropping, and advancing) until you have placed all 22 frames into the Frame Stack palette.

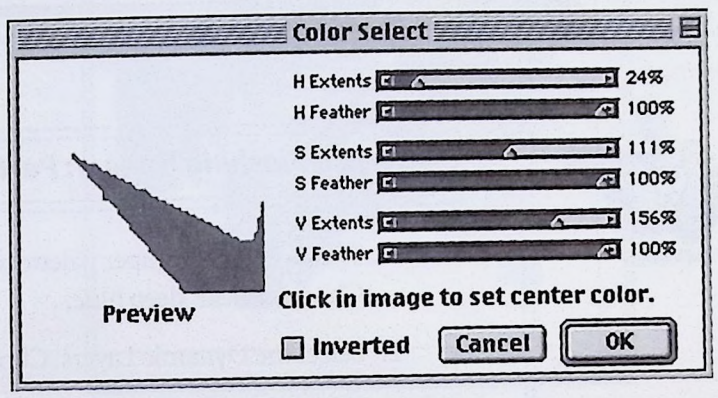
Applying Finishing Touches

1. Again, from the **SF-Painter>PSA Car Crash Flames** folder, open the cel **cc15.TIF**.
2. Select File>Clone, then close the original.
3. Reselect the clone. With the Magic Wand tool, click on the yellow emphatic star, marking the crash.

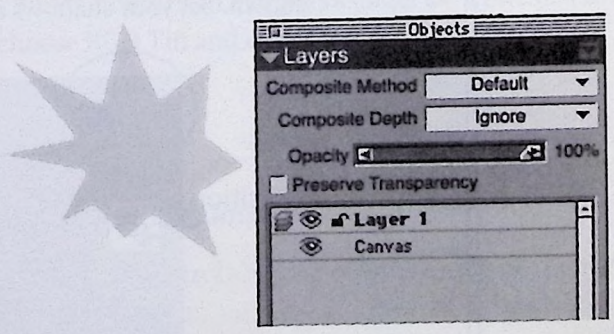
The timing for the movie is set in a dialog box when you save as a QuickTime or AVI. There is one speed for the entire movie. Speeding up and slowing down effects can be created by placing in more frames of an image which is to appear moving slowly. If you are very interested in changing the speed of your movie, import it into a program such as Adobe Premiere or After Effects, and adjust it there. Also, factors such as quantity of RAM you have, file size, compression method, and computer clock speed can influence the apparent speed of the movie.

4. Choose Select>Invert, then Click Delete/Backspace to clear the canvas.

5. Choose Select>Color Select. In the ensuing dialog box, set the sliders as shown and click in the star's center (on the image — not preview) to cleanly select the star. Click OK to accept the parameters and exit the dialog box.



6. With the Adjuster tool, drag it into the center of the image area. Notice the star has become Layer 1 in the layer list.



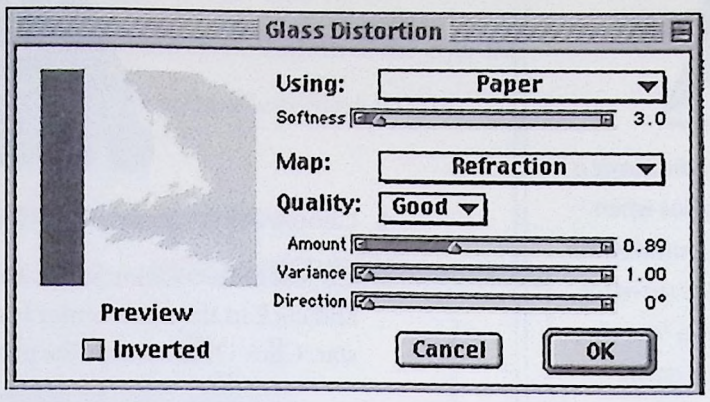
7. Choose Effects>Orientation>Scale. In the dialog box, drag out a corner handle until the star fills almost the entire image area. The dialog box should show a value higher than 200%. After stretching out the star, click OK to exit the dialog box and apply the scaling.

8. Make sure that the Art Materials palette is on the screen. Click on the Paper icon to make the paper textures accessible.

9. With the Layer 1 active, (the star layer) choose Effects>Focus>Glass Distortion. Set the sliders like the ones in the following illustration. Experiment with different paper textures for different types of refractions. The refraction in the

To facilitate an efficient workflow, open a few source files at a time; for example, cels 8–15, and place them into the movie. Wait until they are all placed before closing them. Open the next batch and continue.

example is created by the paper texture "Handmade." Click OK to exit the dialog box and apply the effect to the star.

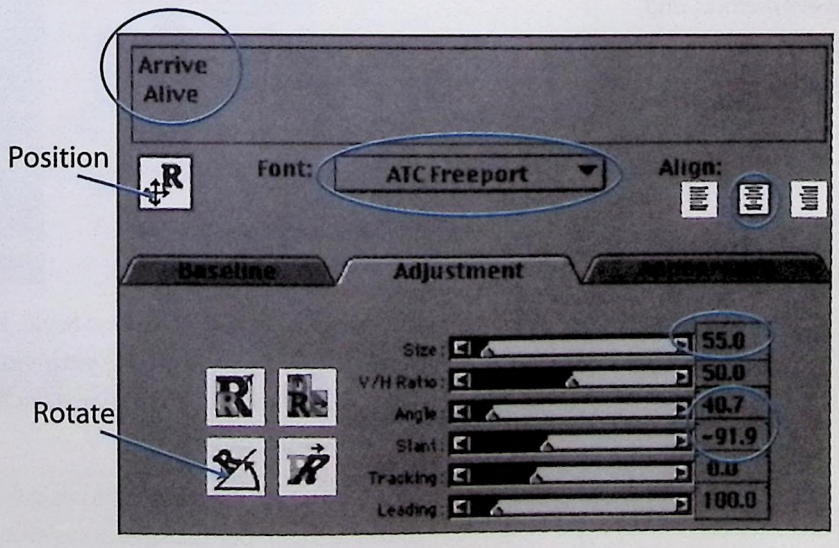


10. Leave your file open.

Creating a Flashing Banner: Part 1

1. Switch from the Paper palette to the Color palette on the Art Materials palette. Choose a clear, deep blue.
2. Select the Dynamic Layers. Choose the Dynamic Text. Click the Apply button.
3. Type the words "Arrive Alive" on two lines in the text field in the Dynamic Text dialog box. Choose the font ATC Freeport. Set up the sliders and alignment as shown. Set your shadows and fill as you wish.

It is OK to close the clone source if the only reason you made a clone is to create a duplicate file.

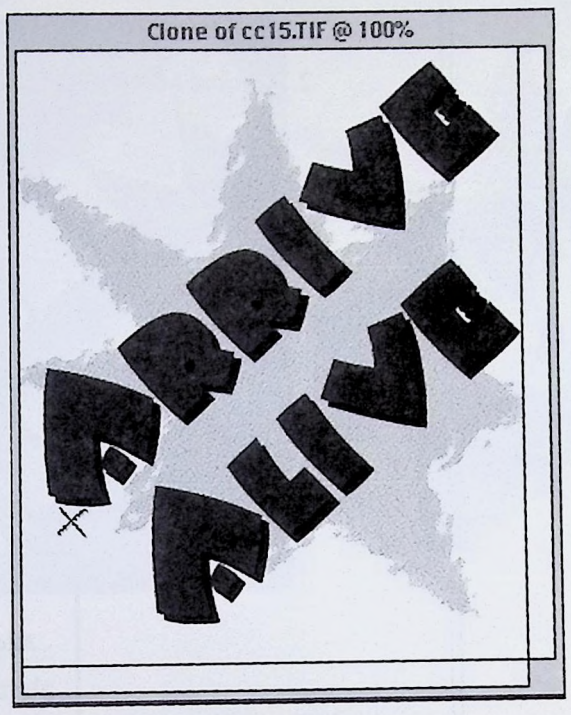


Position icon:

Text Rotation icon:

You can access any open palette while in a dialog box for on-the-fly experimentation.

4. Using both the Position icon and the Type Rotation icon, drag and rotate the type until it is in a position similar to the type in the illustration below.
5. Click OK when you are satisfied with the position and appearance of the text.

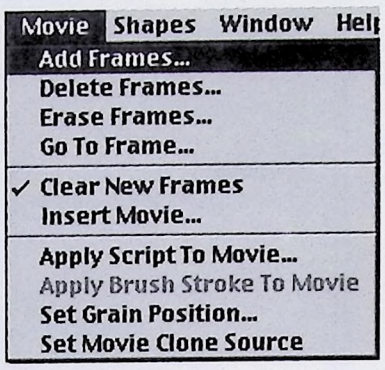


6. In the layer list pop-out menu, choose Drop All.
7. Save this file into your **Work in Progress** folder as "Positive.TIF". When prompted, choose RGB Tiff and click OK.
8. Select>All.
9. Choose Edit>Copy.
10. Choose Edit>Paste Into New Image.
11. Choose Effects>Tonal Control>Negative. Now you have a light, happy version and a dark, dramatic version.
12. Immediately save this file in your **Work in Progress** folder as "Negative.TIF". When prompted, choose RGB Tiff and click OK.
13. Leave both files open for the next exercise.

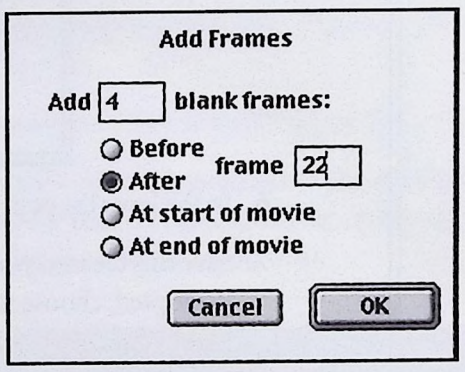
Creating a Flashing banner: Part 2

1. Click on the Movie Image window to make it active. Make sure that the movie is wound to the end Frame 22.

2 Choose Movie>Add Frames.



3. In the ensuing dialog box, add 4 blank frames after Frame 22. Click OK.



4. Advance one frame in the Frame Stack palette (to Frame 23).
5. Paste into the Image window (pasting the light version).
6. Drop the layer (in the Layer palette).
7. Advance one frame in the Frame Stack palette.
8. Make the **Negative.TIF** file active and choose Select>All, then Edit>Copy.
9. Click on the Movie Image window and paste into the Image window.
10. Drop the layer.
11. Repeat the steps above (selecting, copying, selecting the movie, pasting, dropping, and advancing) to fill in the end frames of the animation.

You could have any variation of the negative and positive versions. The one in the example has a positive frame, a negative frame, and two positive frames. Feel free to experiment with any of the Tonal controls to customize your movie.

Reaping the Rewards

1. Close the Negative and Positive files and don't save any changes. You can even throw them out.
2. Rewind the movies. Play your movie and enjoy.
3. Close the movie file. It will automatically save as a Frame Stack. Or choose Save As for other options such as AVI, QuickTime, or GIF Animation.

Notes:

Project F: Sports Web Page

Before we begin, take a look at the final Web page on the last page of this project. With the rising demand for commercial Web site development, the need for interesting Web design is a marketable venue for designers. In the Sports Web Page, you will apply the skills learned in Chapter 12. This project encompasses Image Slicing, preparing elements for Web placement, and the creation of a navigational element.

Preparing Images for Placement

1. Open the **s_page.GIF** file from your **Root** folder.
2. Open the **Hockey.TIF** file from the **SF-Painter** folder.
3. Crop the image to include the center action and part of the players on the left as indicated below. Leave it open and continue.

Creating Slices

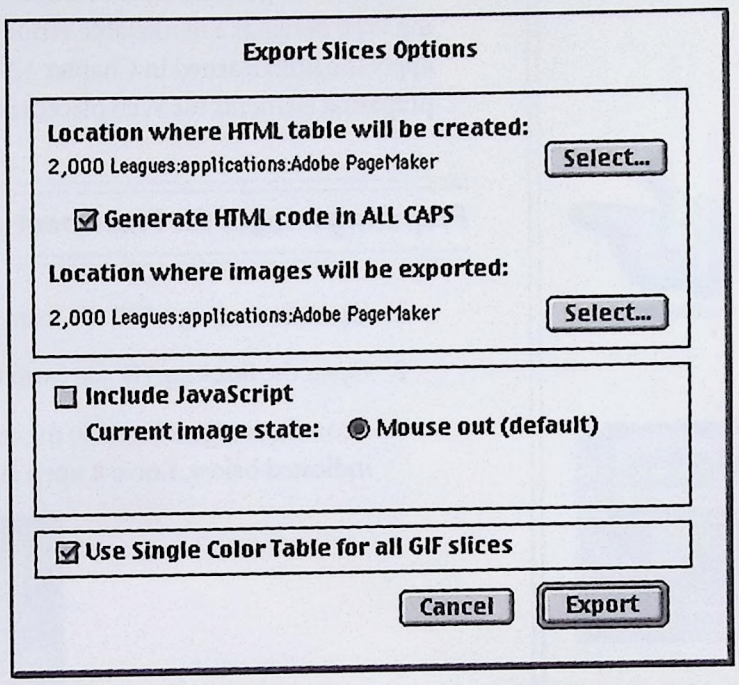
1. From the Objects palette, select the Dynamic Layers, choose the Image Slicer, and click the Apply button.
2. With the Horizontal Slicer selected, click to assign three horizontal slices.
3. Click to place the lowest horizontal slice directly beneath the center hockey player's skate. (We want a horizontal slice of ice.)

4. Select the Vertical Slicer and make three vertical slices. The slice on the left should be larger than the other two.

Each Image slice can have its own saving format according to how much compression the imagery can withstand and still look good on the screen.

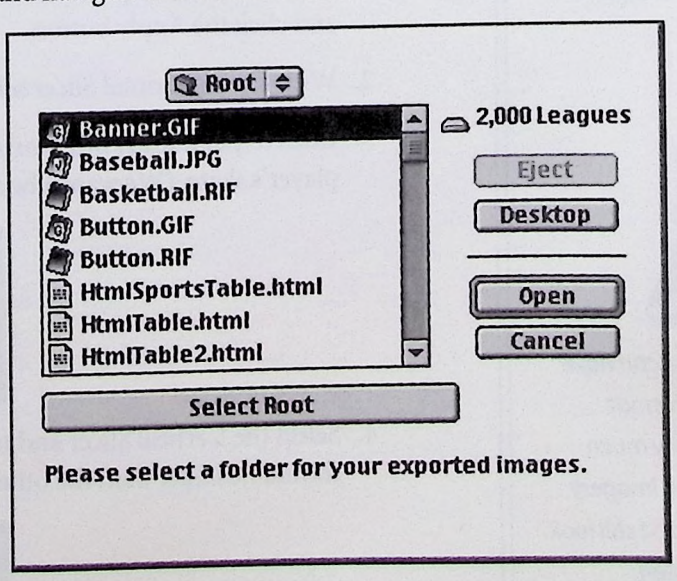
To delete a slice, select the appropriate slicer (horizontal or vertical), and while holding the Command/ Control key, click on the slice you wish to remove.

5. With the slice in the upper-left corner selected, click the Export Settings button at the bottom of the dialog box.
6. The Export setup dialog box appears when you choose the location where the HTML table will be created and the location where the images will be exported.



7. Clicking the top Select button begins a simple navigation to the **Root** folder. Name the slice "Hockey1.html" and click Save.
8. Notice under the heading "Location where images will be exported" that the location assigned in Steps 6 and 7 is listed. If it is not, click the lower Select button and navigate to the **Root** folder.

When you choose the Root folder for the location where the HTML table will be stored (the first Select button), Painter automatically selects that location for your exported images (second Select button).

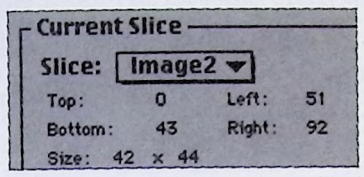


9. Click the Select Root button to assign the location and exit back to the main Export options dialog box.

10. Enable the Use Single Color Table for all GIF slices option toward the bottom of the dialog box, and then click the Export button.

Continuing to Export Image Slices

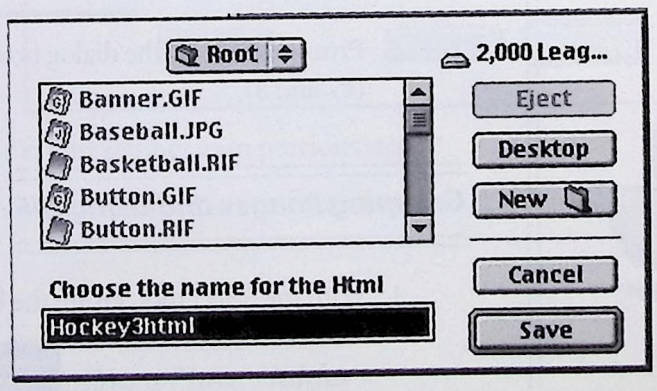
1. Select the second slice from the Current Slice pull-down menu in the Image Slicer dialog box.



2. Save this slice as a GIF file. Use the same procedure to assign export options such as you did in the first slice. The only difference is that you will name this slice "Hockey2.html" when you navigate to the **Root** folder and save it there.

3. Select the third slice from the Current Slice pull-down menu in the Image Slicer dialog box.

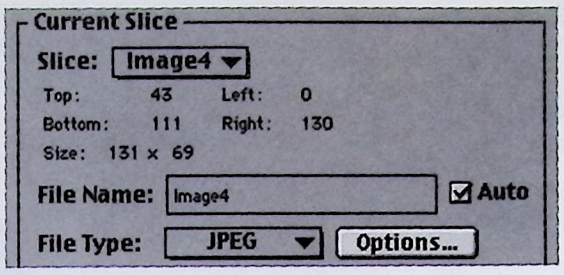
4. Save this slice as a GIF file. Use the same procedure to assign export options such as you did in the first slice. The only difference is that you will name this slice "Hockey3.html" when you navigate to the **Root** folder and save it there.



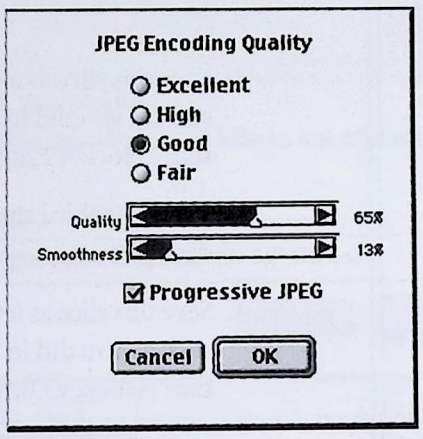
5. Choose the Select tool from the Image Slicer dialog box.

6. Click on the center of the lower horizontal line of the left-most slice in the center group (slice 4). Drag over the center slice and right-hand slice (slices 5 and 6). This action groups the other three smaller segments into one large segment.

7. This newly created slice is named Image4 in the Current Slice pull-down menu located in the Image Slicer dialog box. Select JPEG for the file type. (It will be set to GIF from step #4.)



8. Click the Options button to set the JPEG options. Click OK.



9. Proceed through the dialog box, setting the export settings as in previous steps (#7 and 8).

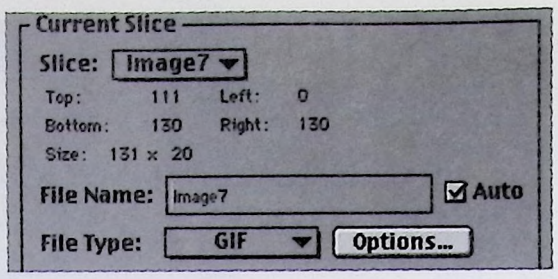
Grouping Images and Using GIF

1. With the Select tool, group the bottom three segments into one slice.

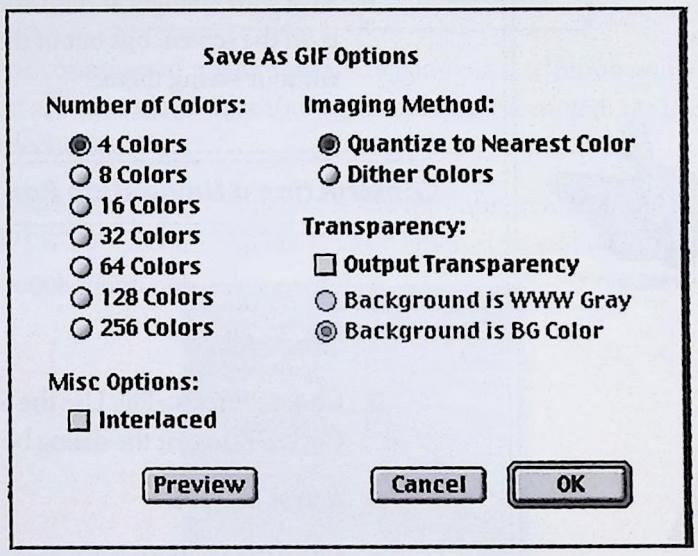
2. In the Image Slicer dialog box, choose GIF as the file type. Notice that the dimensions reflect the enlarged slice.

The Select tool

"Progressive JPEGS" load a rough version into the browser first, then progressively load smoother ones until the image has fully loaded.



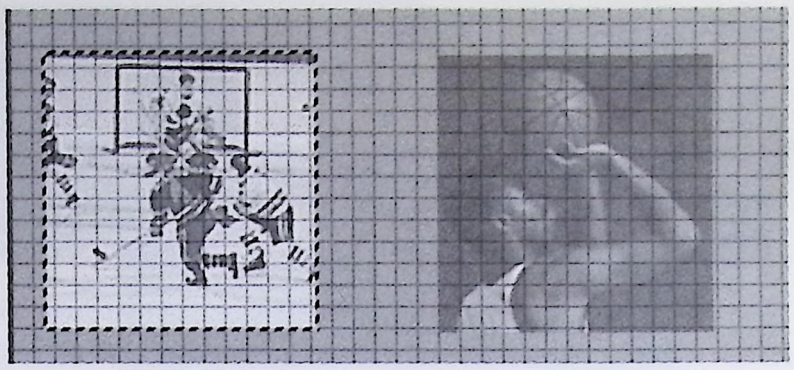
3. Click the Options button. In the GIF Options dialog box, assign 64 colors and click the Preview Data button. The ice looks pretty much like ice. Select 4 Colors and Preview. It should look very similar. Leave it set at 4 colors and let the rest of the options remain at default settings. Click OK to exit.



4. Set the export settings as in previous steps.
5. When you are finished with all the settings, click OK to exit the dialog box.

Making and Aligning a Place-Holder

1. In the layer list, turn off the visibility for all Image Slicer layers (by clicking on the eye icon). Make the canvas the active layer.
2. Select>All. Choose Edit>Copy.
3. Click on the Grid icon in the upper-right area of the **s_page.GIF** file. Click above the vertical scroll bar.
4. Choose Edit>Paste. Place the image to the left of the Basketball picture. Use the grid to line it up.

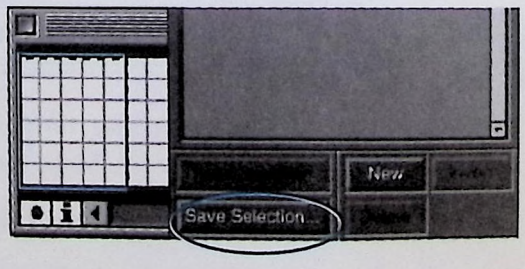


5. Drop the layer by clicking the Drop button on the bottom of the Layer palette.
6. Save your changes at this time. Minimize or Window Shade this document so it is on the screen, but out of the way. Close any other files you may have open without saving them.

Constructing a Navigation Bar

Before you create a Group, assign a slice that is not touching the Slice you wish to use to start the group to be the active slice. This makes it much easier to control which segments get grouped.

1. Open a new document 400 × 72 pixels at 72 ppi.
2. Select>All.
3. Choose Effects>Fill. Use the Sports pattern you saved in the Pattern palette. Click OK to exit the dialog box.
4. Access the grid.
5. Select the Rectangular Selection tool. Count off 5 grid lines and drag a selection from the base of the image, and then up to the upper-left corner. (See illustration after Step 7.)
6. On the Objects palette, open the Masks section.
7. At the bottom of the Mask palette, click the Save Selection button.

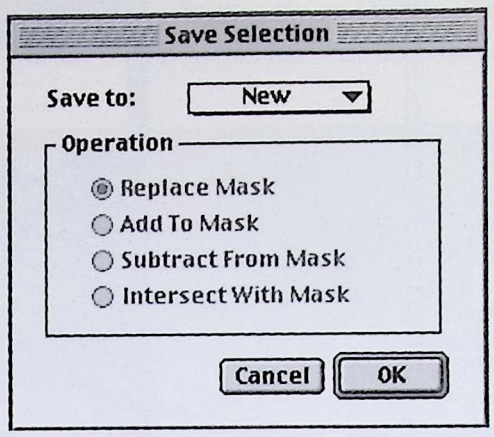


Note that the grouped segments use the name of the segment first selected into the group.

If the Item dragged from one picture to another does not immediately appear, simply drag with the Adjuster in the picture "dragged-into" and your newly-created layer will become visible. It is usually lurking under the upper-left scroll bar.

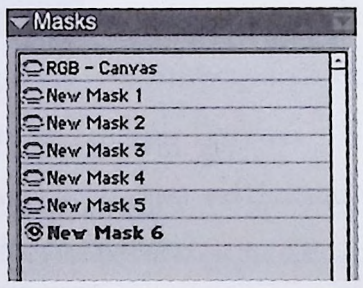
Alternately, don't drag into, but simply copy-and-paste.

8. The Save Selection dialog box prompts you to save as a New mask. Click OK.



9. Continue counting off 5 grid marks, dragging out a selection and saving the selection as a new mask. Save the Selection when prompted. Do this for four more selections.

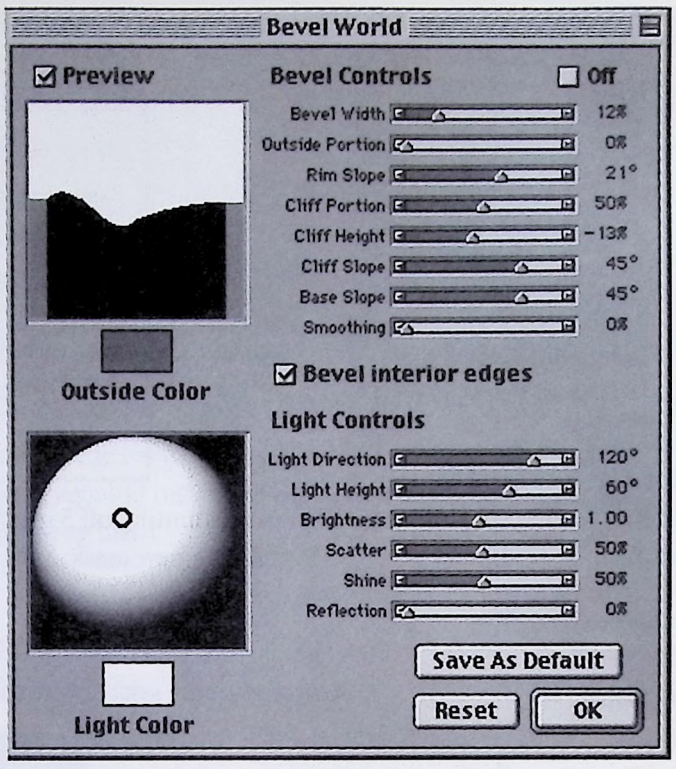
10. The last selection will be oversized. Select the entire remaining area. Proceed with the saving selection sequence. The Mask List should look like this.



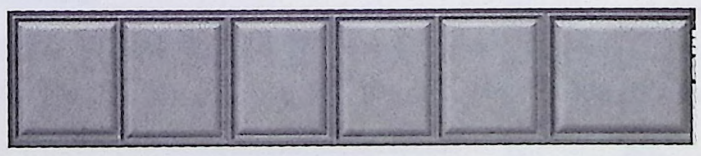
11. Turn off the grid and save your hard work as "Nav_Bar.RIF" into the Root folder.

Making 3-D Buttons

1. Select the RGB Canvas at the top of the mask list.
2. Click the Load Selection button at the bottom of the mask list.
3. Choose New Mask 1 when prompted and click OK.
4. Select the Dynamic Layer, choose Bevel World and click the Apply button.
5. In the Bevel World dialog box, set the parameters as shown below. When you've completed the settings, click OK to exit.



6. In the layer list, drop the active layer.
7. Click the Load Selection button as in Step 2. Proceed through the sequence, (through Step 6) for the remaining "buttons" on the navigational bar.

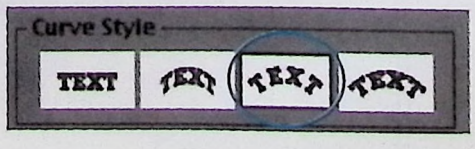


The Navigation Bar at this point.

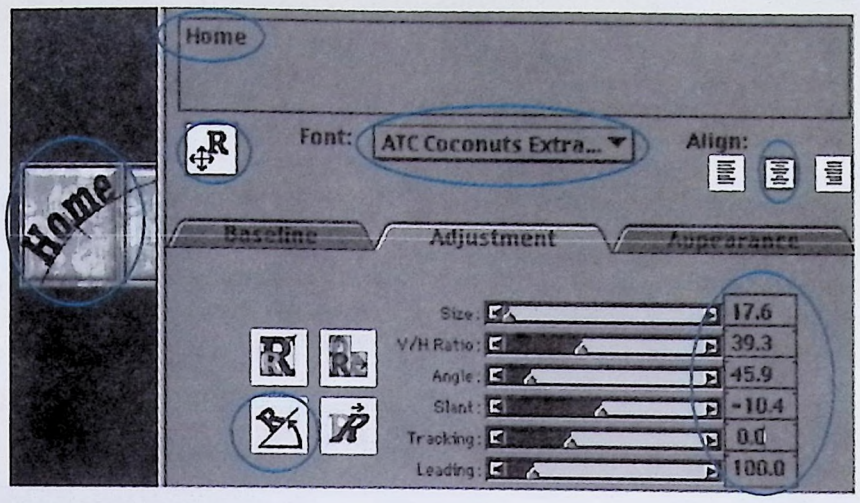
8. Save your hard work and leave it open.

Labeling the Buttons

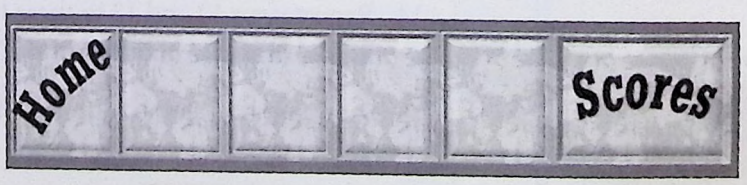
1. Set black as your color. Choose the Dynamic Text layer. Click the Apply button.
2. In the Baseline section, set your Curve style to the third icon.



3. Type the word "Home". Use the font ATC Coconuts Extra Bold. Set the size to 12 points. Use no shadow. Use the Position and Rotation icon to move the text over the first button on the Navigation bar. (See the illustration below.)



4. You may wish to size up the text slightly with the sliders after it is in position.
5. When the word is aligned to your satisfaction, click OK to exit the dialog box.
6. From the layer list, drop the Dynamic Text layer.
7. Once again, choose the Dynamic Text and click the Apply button.
8. Type the word "Scores" in the text field on the dialog box.
9. Select the same font, ATC Coconuts Extra Bold, at 20 points. Leave the other settings the same.
10. When the text is correctly lined up over the last button on the Navigation bar, click OK to exit the dialog box.



11. In the layer list, drop the Dynamic Text layer. Save your changes so far.

Hint for Step 9: It is helpful to NOT turn off the "ants" from the previous selection. Simply put the cursor crosshairs next to the existing selection and drag off five squares on the grid. Otherwise, you'll go cross-eyed trying to count grid marks!

Placing the Icons

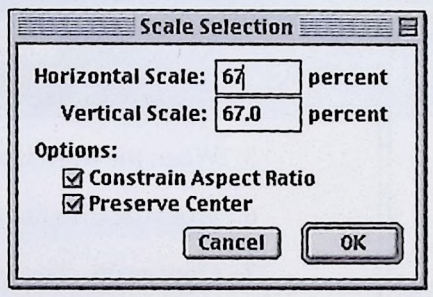
1. Open **Soccer.TIF** from the **SF-Painter** folder.
2. With the Rectangular Selection tool, select the soccer ball and a bit of the shoes.
3. Get the Adjuster tool and drag the picture over to the Nav_bar.RIF.

Don't forget to drop the active layer (as in step 6) before repeating the sequence of steps!

The shortcut to turn off the layer bounding box is Command/Control-Shift-H.

4. Position it over the second button and when it is in place, click the Drop button in the layer list.
5. Open **Hockey.TIF** from the **SF-Painter** folder.
6. With the Rectangular Selection tool, select the center hockey player's legs, skates, and torso as shown below.

7. Get the Adjuster tool and drag the picture over to the Nav_bar.RIF.
8. Position it over the next button.
9. It needs to be scaled slightly. Choose Effects>Orientation Scale. Type "67" into the text fields. Click OK to apply the scale and exit the dialog box.



10. With the Adjuster tool, move it into its exact position.
11. In the layer list, click the Drop button.
12. Select a portion of the image to use as an Icon. Drag it over to the Nav_bar.RIF
13. Scale the icon portion, then drop it.
14. Repeat steps 12 and 13 to these two images from the **SF-Painter** folder: **Basketball.TIF** and **Baseball.TIF.**
15. Save your changes to **nav_bar.RIF** now.

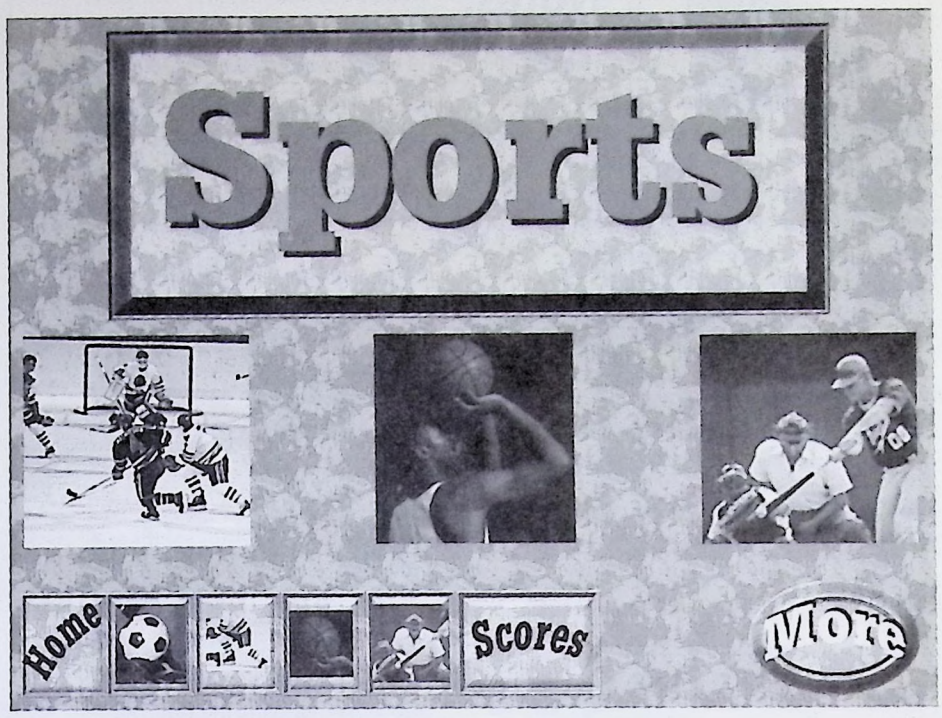
Updating the Web Page

1. Open the Sports Web Page mockup called **s_page.GIF** located in the **Root** folder.
2. Return to the Navigation bar. Select>All.
3. With the Adjuster tool, drag the entire Navigation bar into the Web page.

If your text does not reflect the color choice, click the Apply Fill button (in the Appearances section) to force the fill.

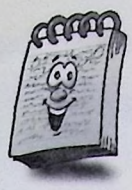
If you wish to turn this Navigation Bar into a series of client image maps, see Chapter 12 about Web design.

4. Position it in the lower left of the page and drop the layer.



The finished Web page mock-up.

5. Close the Web page and make sure you save your changes.
6. Close all other files without saving.



Notes:

Glossary

Achromatic

By definition, having no color; therefore, completely black or white or some shade of gray.

Acrobat

This program by Adobe Systems, Inc. allows the conversion (using Acrobat Distiller) of any document from any Macintosh or Windows application to PDF format, which retains the page layout, graphics, color, and typography of the original document. It is widely used for distributing documents online because it is independent of computer hardware. The only software needed is a copy of Acrobat Reader, which can be downloaded free.

Adaptive Palette

A sampling of colors taken from an image, and used in a special compression process usually used to prepare images for the world wide web.

Additive Color Process

The additive color process is the process of mixing red, green, and blue light to achieve a wide range of colors, as on a color television screen. See Subtractive Color.

Adjacent Color

The eye will respond to a strong adjacent color in such a way as to affect the perception of the particular color in question. That is, a color having different adjacent colors may look different than it does in isolation. Also referred to as metamerism.

Adobe Premiere

Slide show application that creates moving presentations with effects from still images and sound.

Adobe Systems Incorporated

A major software developer responsible for the creation of the PostScript page description language (see PostScript), used in almost all graphic arts environments. PostScript resides in a printer or Raster Image Processor (see Raster Image Processor) and is used to convert graphics from the screen to high-resolution output. Adobe also develops the highly popular Photoshop, Illustrator, PageMaker, and Premiere graphics and video applications, in addition to a range of others.

Algorithm

A specific sequence of mathematical steps to process data. A portion of a computer program that calculates a specific result.

All signature folding dummy

A folding dummy in which all of the signatures that make up the job are used to determine the page arrangement for each signature. Also known as a Job Worksheet.

Alpha Channel

An 8-bit channel of data that provides additional graphic information, such as colors or masking. Alpha channels are found in some illustration or graphics programs, and are used in video production.

Anti-Aliasing

A graphics software feature that eliminates or softens the jaggedness of low-resolution curved edges.

Archival storage

The process of storing data in a totally secure and safe manner. Archiving differs from backup in that it's meant to be used to restore entire systems or networks, rather than providing quick and easy access to specific files or folders.

Art

Illustrations and photographs in general; that is, all matter other than text that appears in a mechanical.

Artifact

By definition, something that is artificial, or not meant to be there. An artifact can be a blemish or dust spot on a piece of film, or unsightly pixels in a digital image.

Ascender

Parts of a lower-case letter that exceed the height of the letter "x". The letters b, d, f, h, k, l, and t have ascenders.

ASCII

The American Standard Code for Information Interchange, which defines each character, symbol, or special code as a number from 0 to 255 (8 bits in binary). An ASCII text file can be read by any computer, and is the basic mode of data transmission on the Internet.

ATM (Adobe Type Manager)

A utility program which causes fonts to appear smooth on screen at any point size. It's also used to manage font libraries.

Backing Up

The process of making copies of current work or work-in-progress as a safety measure against file corruption, drive or system failure, or accidental deletion. Backing up work-in-progress differs from creating an archive (see Archiving) for long-term storage or system restoration.

Banding

A visible stair-stepping of shades in a gradient.

Banner

A large headline or title extending across the full page width, or across a double-page spread.

Baseline

The implied reference line on which the bases of capital letters sit.

Bézier Curves

Curves that are defined mathematically (vectors), in contrast to those drawn as a collection of dots or pixels (raster). The advantage of these curves is that they can be scaled without the "jaggies" inherent in enlarging bitmapped fonts or graphics.

Bindery marks

Marks that appear on a press sheet to indicate how the sheet should be cropped, folded, collated, or bound.

Binding

In general, the various methods used to secure signatures or leaves in a book. Examples include saddle-stitching (the use of staples in a folded spine), and perfect-bound (multiple sets of folded pages sewn or glued into a flat spine).

Bit (Binary Digit)

A computer's smallest unit of information. Bits can have only two values: 0 or 1. This can represent the black and white (1-bit) pixel values in a line art image. Or in combination with other bits, it can represent 16 tones or colors (4-bit), 256 tones or colors (8-bit), 16.8 million colors (24-bit), or a billion colors (30-bit). These numbers derive from counting all the possible combinations (permutations) of 0 or 1

settings of each bit: 2 x 2 x 2 = 16 colors; 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 = 256 colors; 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2= 16.8 million colors.

Bitmap image

An image constructed from individual dots or pixels set to a grid-like mosaic. Each pixel can be represented by more than one bit. A 1-bit image is black and white because each bit can have only two values (for example, 0 for white and 1 for black). For 256 colors, each pixel needs eight bits (2 8). A 24-bit image refers to an image with 24 bits per pixel (2 24), so it may contain as many as 16,777,216 colors. Because the file must contain information about the color and position of each pixel, the disk space needed for bitmap images is usually quite significant. Most digital photographs and screen captures are bitmap images.

Bitmapped

Forming an image by a grid of pixels whose curved edges have discrete steps because of the approximation of the curve by a finite number of pixels.

Black

The absence of color; an ink that absorbs all wavelengths of light.

Black point

The pixel which is set as the darkest-valued pixel in an image.

Blanket

The blanket, a fabric coated with natural or synthetic rubber wrapped around the cylinder of an offset press, transfers the inked image from the plate to the paper.

Bleed

Page data that extends beyond the trim marks on a page. Illustrations that spread to the edge of the paper without margins are referred to as "bled off."

Blend

See Graduated fill.

Blind Emboss

A raised impression in paper made by a die, but without being inked. It is visible only by its relief characteristic.

Blow up

An enlargement, usually of a graphic element such as a photograph.

Body Copy

The text portion of the copy on a page, as distinguished from headlines.

Border

A continuous line that extends around text; or a rectangular, oval, or irregularly-shaped visual in an ad.

Bounding Box

The imaginary rectangle that encloses all sides of a graphic, necessary for a page layout specification.

Brightness

1. A measure of the amount of light reflected from a surface. 2. A paper property, defined as the percentage reflection of 457-nanometer (nm) radiation. 3. The intensity of a light source. 4. The overall percentage of lightness in an image.

Browser

An appliation devloped and used to visit websites locatd on the Internet.

Bullet

A marker preceding text, usually a solid dot, used to add emphasis; generally indicates that the text is part of a list.

Burn

1. To expose an image onto a plate. 2. To make copies of ROM chips or CD-ROMs. 3. To darken a specific portion of an image through photographic exposure.

Byte

A unit of measure equal to eight bits (decimal 256) of digital information, sufficient to represent one text character. It is the standard unit measure of file size. (See also Megabyte, Kilobyte, and Gigabyte).

Cab

See Flat.

Calibration

Making adjustments to a color monitor and other hardware and software to make the monitor represent as closely as possible the colors of the final printed piece.

Calibration Bars

A strip of reference blocks of color or tonal values on film, proofs, and press sheets, used to check the accuracy of color registration, quality, density, and ink coverage during a print run.

Callout

A descriptive label referenced to a visual element, such as several words connected to the element by an arrow.

Camera Ready

A completely finished mechanical, ready to be photographed to produce a negative from which a printing plate will be made.

Canvas

In Painter, the base layer of a picture file.

Cap Line

The theoretical line to which the tops of capital letters are aligned.

Caps

An abbreviation for capital letters.

Caps and Small Caps

A style of typesetting in which capital letters are used in the normal way, while the type that would normally be in lower case has been changed to capital letters of a smaller point size. A true small-caps typeface does not contain any lower-case letters.

Caption

The line or lines of text that identify a picture or illustration, usually placed beneath it or otherwise in close proximity.

CD-ROM

A device used to store approximately 600MB of data. Files are permanently stored on the device and can be copied to a disk but not altered directly. ROM stands for Read-Only Memory. Equipment is now available on the consumer market for copying computer files to blank CD-ROMs.

Center marks

Press marks that appear on the center of all sides of a press sheet to aid in positioning the print area on the paper.

Character Count

The number of characters (letters, figures, signs or spaces) in a selected block of copy. Once used to calculate the amount of text that would fit on a given line or region when physically setting type.

Choke

See Trapping

Chooser

A part of the Macintosh operating system that permits selection of a printer or other peripheral device. Chooser is also used to access resources on a network.

Chroma

The degree of saturation of a surface color in the Munsell color space model.

Cromalin

A single-sheet color proofing system introduced by DuPont in 1971 and still quite popular in the industry. It uses a series of overlaid colorants and varnish to simulate the results of a press run.

Chromaticity Diagram

A graphical representation of two of the three dimensions of color. Intended for plotting light sources rather than surface colors. Often called the CIE diagram.

Cicero/Didot Point

The cicero is a unit of horizontal distance slightly larger than the pica, used widely in continental Europe. A cicero equals 0.178 inches, or 12 Didot points.

Clipboard

The portion of computer memory that holds data that has been cut or copied. The next item cut or copied replaces the data already in the clipboard.

Clone

Direct duplicate of the Clone Source. The basis for many of the effects possible in Painter.

Cloning

Duplication of pixels from one part of an image to another.

CMS

See Color Management System

CMYK

Acronym for cyan, magenta, yellow, and black, the four process color inks which, when properly overprinted, can simulate a subset of the visible spectrum. See also color separation. Also refers to digital artwork that contains information necessary for creating color separations.

CMYK (Cyan, Magenta, Yellow, Black)

Acronym for the process colors cyan, magenta, yellow, and black (subtractive primaries) used in color printing. The letter K stands for "Key," although it is commonly used to refer to the Black ink that is added to the three colors when necessary. When printing black text as part of a four-color process, only the black ink is used. A normal four-color separation will have a plate for each of the four colors. When combined on the printed piece, the half-tone dots of each color give the impression of the desired color to the eye.

Coated

Printing papers having a surface coating (of clay or other material) to provide a smoother, more even finish with greater opacity.

Cold type

Type produced by photographic or digital methods, as opposed to the use of molten metal as in the old Linotype machine.

Collate

To gather separate sections or leaves of a publication together in the correct order for binding.

Collate and cut

Multiple signatures that are stacked then cut to be later placed in sequential order, drilled, and placed in three-ring binders.

Color Balance

The combination of yellow, magenta, and cyan needed to produce a neutral gray. Determined through a gray balance analysis.

Color Cast

The modification of a hue by the addition of a trace of another hue, such as yellowish green, pinkish blue, etc. Normally, an unwanted effect that can be corrected.

Color Chart

A printed chart of various combinations of CMYK colors used as an aid for the selection of "legal" colors during the design phase of a project.

Color Control Strip

A printed strip of various reference colors used to control printing quality. This strip is normally placed outside the "trim" area of a project, as a guide and visual aid for the pressman.

Color Conversion

Changing the color "mode" of an image. Converting an image from RGB to CMYK for purposes of preparing the image for conventional printing.

Color Correction

The process of removing casts or unwanted tints in a scanned image, in an effort to improve the appearance of the scan or to correct obvious deficiencies, such as green skies or yellowish skin tones.

Color Gamut

The range of colors that can be formed by all possible combinations of the colorants of a given reproduction system (printing press) on a given type of paper.

Color Key

An overlay color proof of acetate sheets, one for each of the four primary printing inks. The method was developed by 3M Corporation and remains a copyrighted term.

Color Management System

A process or utility that attempts to manage color of input and output devices in such a way that the monitor will match the output of any CMS-managed printer.

Color Model

A system for describing color, such as RGB, HLS, CIELAB, or CMYK.

Color overlay

A sheet of film or paper whose text and art correspond to one spot color or process color. Each color overlay becomes the basis for a single printing plate that will apply that color to paper.

Color Picker

A function within a graphics application that assists in selecting a color.

Color Proof

A printed or simulated printed image of the color separations intended to produce a close visual representation of the final reproduction for approval purposes and as a guide to the press operator.

Color Separation

The process of transforming color artwork into four components corresponding to the four process colors. If spot colors are used, additional components may be created containing only those items that will appear in the corresponding spot color layer. Each component is imaged to film or paper in preparation for making printing plates that correspond to each ink.

Color Sequence

The color order of printing the cyan, magenta, yellow, and black inks on a printing press. Sometimes called rotation or color rotation.

Color Space

Because a color must be represented by three basic characteristics depending on the color model, the color space is a three-dimensional coordinate system in which any color can be represented as a point.

Color Temperature

The temperature, in degrees Kelvin, to which a blackbody would have to be heated to produce a certain color radiation. (A "blackbody" is an ideal body or surface that completely absorbs or radiates energy.) The graphic arts viewing standard is 5,000 K. The degree symbol is not used in the Kelvin scale. The higher the color temperature, the bluer the light.

Color Transparency

A positive color photographic image on a clear film base that must be viewed by transmitted light. It is preferred for original photographic art because it has higher resolution than a color print. Transparency sizes range from 35mm color slides up to 8x10in. (203x254mm).

Colorimeter

An optical measuring instrument designed to measure and quantify color. They are often used to match digital image values to those of cloth and other physical samples.

Column rule

A thin vertical rule used to separate columns of type.

Combination signatures

Signatures of different sizes inserted at any position in a layout.

Comp

Comprehensive artwork used to present the general color and layout of a page.

Compose

To set copy into type, or lay out a page.

Composite proof

A version of an illustration or page in which the process colors appear together to represent full color. When produced on a monochrome output device, colors are represented as shades of gray.

Compression

A digital technique used to reduce the size of a file by analyzing occurrences of similar data. Compressed files occupy less physical space, and their use improves digital transmission speeds. Compression can sometimes result in a loss of image quality and/or resolution.

Condensed Type

A typeface in which the width of the letters has been reduced. Condensed type can be a specific font, or the result of applying a percentage of normal width by a formatting command.

Continuous Tone

An image such as an original photograph in which the subject has continuous shades of color or gray tones through the use of an emulsion process. Continuous tone images must be screened to create halftone images in order to be printed.

Contrast

The relationship between the dark and light areas of an image.

Copyright

Ownership of a work by the originator, such as an author, publisher, artist, or photographer. The right of copyright permits the originator of material to prevent its use without express permission or acknowledgment of the originator. Copyright may be sold, transferred, or given up contractually.

CorelDRAW

A popular drawing program originally designed for the Windows environment, but now available as a Macintosh program. CorelDRAW is known to create files that can cause printing and/or output problems in many prepress environments.

Creep

The progressive extension of interior pages of the folded signature beyond the image area of the outside pages. Shingling is applied to correct for creep.

Crop Marks

Printed short, fine lines used as guides for final trimming of the pages within a press sheet.

Cropping

The elimination of parts of a photograph or other original that are not required to be printed.

Crossover

An element in a book (text, line art, or other graphic)that appears on both pages of a reader spread crossing over the gutter.

Custom printer description file

A file containing information specific to a type of output device; used in conjunction with a standard PPD file to customize the printing process.

DCS (Desktop Color Separation)

Acronym for Desktop Color Separation, a version of the EPS file format. DCS 1.0 files are composed of five PostScript files for each color image: cyan, magenta, yellow, and black file, plus a separate low-resolution FPO image to place in a digital file. In contrast, DCS 2.0 files have one file that stores process color and spot color information.

Default

A specification for a mode of computer operation that operates if no other is selected. The default font size might be 12 point, or a default color for an object might be white with a black border.

Densitometer

An electronic instrument used to measure optical density. Reflective (for paper) and transmissive (for film).

Descender

The part of a lower-case letter that extends below the baseline (lower edge of the x-height) of the letter. The letters y, p, g, and j contain descenders.

Desktop

1. The area on a monitor screen on which the icons appear, before an application is launched. 2. A reference to the size of computer equipment (system unit, monitor, printer) that can fit on a normal desk; thus, desktop publishing.

Desktop Publishing (DTP)

Use of a personal computer, software applications, and a high-quality printer to produce fully composed printed documents. DTP is, in reality, an incorrect term these days. In the early days of Macintosh and PostScript technology, the term Desktop Publishing inferred that the materials produced from these systems was somehow inferior (as opposed to professional publishing). Now, the overwhelming majority of all printed materials - regardless of the quality - are produced on these systems, up to and including nationally famous magazines, catalogs, posters, and newspapers

Die line

In a digital file, the outline used to mark where cutting, stamping, or embossing the finished printed piece will occur. Uses to create a particular shape, such as a rolodex card.

Digital

The use of a series of discrete electronic pulses to represent data. In digital imaging systems, 256 steps (8 bits, or 1 byte) are normally used to characterize the gray scale or the properties of one color. For text, see ASCII.

Digital Camera

A camera which produces images directly into an electronic file format for transfer to a computer.

Digital Proofs

Digital proofs are representations of what a specific mechanical will look like when output and reproduced on a specific type of printing press. The difference with a digital proof is that it is created without the use of conventional film processes and output directly from computer files.

Dingbat

A font character that displays a picture instead of a letter, number or punctuation mark. There are entire font families of pictographic dingbats; the most commonly used dingbat font is Zapf Dingbats. There are dingbats for everything from the little airplanes used to represent airports on a map, to telephones, swashes, fish, stars, balloons - just about anything.

Direct-to-plate

Producing printing plates directly from computer output without going through the film process.

Disk Operating System (DOS)

Software for computer systems that supervises and controls the running of programs. The operating system is loaded into memory from disk by a small program which permanently resides in the firmware within the computer. The major operating systems in use today are Windows95 and WindowsNT from Microsoft, the Macintosh OS from Apple Computer, and a wide range of UNIX systems, such as those from Silicon Graphics, SUN Microsystems, and other vendors.

Dithering

A technique used in images wherein a color is represented using dots of two different colors displayed or printed very close together. Dithering is often used to compress digital images, in special screening algorithms (see Stochastic Screening) and to produce higher quality output on low-end color printers.

Document

The general term for a computer file containing text and/or graphics.

Dongle

A security device that usually plugs into your keyboard or printer port, that allows copy-protected software to run on your system. Such protected software will only run on systems with the dongle present. This prevents a single copy of software from running on any but one machine at a time.

Dot Gain

The growth of a halftone dot that occurs whenever ink soaks into paper. This growth can vary from being very small (on a high-speed press with fast-drying ink and very non-porous paper) to quite dramatic, as is the case in newspaper printing, where a dot can expand 30% from its size on the film to the size at which it dries. Failure to compensate for this gain in the generation of digital images can result in very poor results on press. Generally speaking, the finer the screen (and therefore, the smaller the dot) the more noticeable dot gain will be.

Double-page Spread

A design that spans the two pages visible to the reader at any open spot in a magazine, periodical, or book.

Downloadable Fonts

Typefaces that can be stored on disk and then downloaded to the printer when required for printing.

DPI (Dots Per Inch)

The measurement of resolution for page printers, phototypesetting machines and graphics screens. Currently graphics screens use resolutions of 60 to 100 dpi, standard desktop laser printers work at 600 dpi, and imagesetters operate at more than 1,500 dpi.

Drop Shadow

A duplicate of a graphic element or type placed behind and slightly offset from it, giving the effect of a shadow.

Drum Scanner

A color scanner on which the original is wrapped around a rotary scanning drum. See Scanner.

DSC

Acronym for the Adobe Document Structure Conventions, designed to provide a standard order and format for information so applications that process PostScript, such as PressWise, can easily find information about a document's structure and imaging requirements. These conventions allow specially formatted PostScript comments to be added to the page description; applications can search for these comments, but PostScript interpreters usually ignore them. TrapWise requires that the PostScript

in incoming files is formatted using conventional DSC comments, so certain functions may not work properly if the file is not DSC-conforming.

Duotone

The separation of a black-and-white photograph into black and a second color having different tonal values and screen angles. Duotones are used to enhance photographic reproduction in two-three-or sometimes four-color work. Often the second, third, and fourth colors are not standard CMYK inks.

Dye

A soluble coloring material, normally used as the colorant in color photographs.

Dye Transfer

A photographic color print using special coated papers to produce a full color image. Can serve as an inexpensive proof.

Dynamic Floater

A type of floater which allows for additional editing after leaving the dialog box.

Electrostatic

The method by which dry toner is transferred to paper in a copier or laser printer, and liquid toners are bonded to paper on some large-format color plotters.

Element

The smallest unit of a graphic, or a component of a page layout or design. Any object, text block, or graphic might be referred to as an element of the design.

Elliptical Dot Screen

A halftone screen having an elliptical dot structure.

Embedding

1. Placing control codes in the body of a document. 2. Including a complete copy of a text file or image within a desktop publishing document, with or without a link (see Linking).

Emulsion

The coating of light-sensitive material (silver halide) on a piece of film or photographic paper.

En Dash

A dash - often used in hyphenated word pairs - that is usually half the width of an em dash.

En Space

A space that is usually equal to half the width of an em space.

EPS

Acronym for encapsulated PostScript, a single-page PostScript file that contains grayscale or color information and can be imported into many electronic layout and design applications.

EPS (Encapsulated PostScript)

Acronym for file format used to transfer PostScript data within compatible applications. An EPS file normally contains a small preview image that displays in position within a mechanical or used by another program. EPS files can contain text, vector artwork, and images.

Expanded Type

Also called extended, a widened version of a typeface design. Type may be extended artificially within a DTP application, or designed as such by the typeface designer. See also Condensed Type.

Export

To save a file generated in one application in a format that is readable in another application.

Extension

A modular software program that extends or expands the functions of a larger program. A folder of Extensions is found in the Macintosh System Folder.

Fill

To add a tone or color to the area inside a closed object in a graphic illustration program.

Film

Non-paper output of an imagesetter or phototypesetter.

Film assembly

See Stripping.

Filter

In image editing applications, a small program that creates a special effect or performs some other function within an image.

First signature folding dummy

A folding dummy that determines the page arrangement for a single signature layout template. This template can then be applied to a job that requires multiple signatures, and PressWise will correctly impose all the pages based on the numbering sequence and binding method specified by the first signature.

Flat

Individual film assembled onto a carrier readied for contacting or platemaking. Referred to as a cab in gravure printing.

Flat Color

Color that lacks contrast or tonal variation. Also, flat tint.

Flatbed Scanner

A scanner on which the original is mounted on a flat scanning glass. See Scanner.

Flexographic printing

A rotary letterpress process printing on a press using a rubber plate that stretches around a cylinder making it necessary to compensate by distorting the plate image. Flexography is used most often in label printing, often on metal or other non-paper material.

Floater

In Painter, an image or effect which "floats" above the canvas. Frequently likened to pictures on clear acetate floating above the image.

Floating Accent

A separate accent mark that can be placed under or over another character. Complex accented characters such as in foreign languages are usually available in a font as a single character.

Flood

A user-defined screened or solid box that prints on and completely covers a PressWise blank page. Can be used to print a flat tint on the page, or to produce a mask for manual stripping in existing film-based pages.

Flop

To make a mirror image of visuals such as photographs or clip art.

Folder

1. The digital equivalent of a paper file folder, used to organize files in the Macintosh and Windows operating systems. The icon of a folder looks like a paper file folder. Double-clicking it opens it to reveal the files stored inside. 2. A mechanical device which folds preprinted pages into various formats, such as a tri-fold brochure.

Folding dummy

A template used for determining the page arrangement on a form to meet folding and binding requirements. See also All signature folding dummy and First signature folding dummy.

Font

A font is the complete collection of all the characters (numbers, uppercase and lowercase letters and, in some cases, small caps and symbols) of a given typeface in a specific style; for example, Helvetica Bold.

Force Justify

A type alignment command which causes the space between letters and words in a line of type to expand to fit within a line. Often used in headlines, and sometimes used to force the last line of a justified paragraph, which is normally set flush left, to justify.

Form

In PressWise, the front or back of a signature.

Four-color Process

See Process Colors

FPO

Acronym for For Position Only, a term applied to low-quality art reproductions or simple shapes used to indicate placement and scaling of an art element on mechanicals or camera-ready artwork. In digital publishing, an FPO can be low-resolution TIFF files that are later replaced with high-resolution versions. An FPO is not intended for reproduction but only as a guide and placeholder for the prepress service provider.

Frame

In desktop publishing, (1.) an area or block into which text or graphics can be placed; (2.) a border on .

FreeHand

A popular vector-based illustration program available from Macromedia.

Frisket

Traditional airbrush technique by which a thin film of adhesive acetate is applied to protect the artwork from accidental oversprays (resist, masks, see Frisket).

Full Measure

A line set to the entire line length.

G (Gigabyte)

One billion (1,073,741,824) bytes (230) or 1,048,576 kilobytes.

Galley Proof

Proofs, usually of type, taken before the type is made up into pages. Before desktop publishing, galley proofs were hand-assembled into pages.

Gamma

A measure of the contrast, or range of tonal variation, of the midtones in a photographic image

Gamma Correction

1. Adjusting the contrast of the midtones in an image. 2. Calibrating a monitor so that midtones are correctly displayed on screen.

Gamut

See Color Gamut

GASP

Acronym for Graphic Arts Service Provider, a firm that provides a range of services somewhere on the continuum from design to fulfillment.

GCR (Gray component replacement)

A technique for adding detail by reducing the amount of cyan, magenta, and yellow in chromatic or colored areas, replacing them with black.

GIF - Graphics Interface File

A CompuServe graphics file format that is used widely for graphic elements in Web pages.

Global Preferences

Preference settings which affect all newly created files within an application.

Gradient fill

See Graduated fill.

Graduated fill

An area in which two colors (or shades of gray or the same color) are blended to create a gradual change from one to the other. Graduated fills are also known as blends, gradations, gradient fills, and vignettes.

Grain

Silver salts clumped together in differing amounts in different types of photographic emulsions. Generally speaking, faster emulsions have larger grain sizes.

Graininess

Visual impression of the irregularly distributed silver grain clumps in a photographic image, or the ink film in a printed image.

Gray Balance

The values for the yellow, magenta, and cyan inks that are needed to produce a neutral gray when printed at a normal density.

Gray Component Replacement

See GCR

Grayscale

1.An image composed in grays ranging from black to white, usually using 256 different tones of gray. 2. A tint ramp used to measure and control the accuracy of screen percentages on press. 3. An accessory used to define neutral density in a photographic image.

Greeking

1. A software technique by which areas of gray are used to simulate lines of text below a certain point size. 2. Nonsense text use to define a layout before copy is available.

Grid

A division of a page by horizontal and vertical guides into areas into which text or graphics may be placed accurately.

Grind-off

The roughing up at the back (or spine) of a folded signature, or of two or more gathered signatures, in preparation for perfect binding.

Gripper edge

The leading edge of a sheet of paper, which the grippers on the press grab to carry the paper through a press.

Group

To collect graphic elements together so that an operation may be applied to all of them simultaneously.

GUI

Acronym for Graphical User Interface, the basis of the Macintosh and Windows operating systems.

Gutter

Extra space between pages in a layout. Sometimes used interchangeably with Alley to describe the space between columns on a page. Gutters can appear either between the top and bottom of two adjacent pages or between two sides of adjacent pages. Gutters are often used because of the binding or layout requirements of a job — for example, to add space at the top or bottom of each page or to allow for the grind-off taken when a book is perfect bound.

Hairline Rule

The thinnest rule that can be printed on a given device. A hairline rule on a 1200 dpi imagesetter is 1/1200 of an inch; on a 300 dpi laser printer, the same rule would print at 1/300 of an inch.

Halftone

An image generated for use in printing in which a range of continuous tones is simulated by an array of dots that create the illusion of continuous tone when seen at a distance.

Halftone Tint

An area covered with a uniform halftone dot size to produce an even tone or color. Also called flat tint or screen tint.

Hard Drive

A rigid disk sealed inside an airtight transport mechanism that is the basic storage mechanism in a computer. Information stored may be accessed more rapidly than on floppy disks and far greater amounts of data may be stored.

High Key

A photographic or printed image in which the main interest area lies in the highlight end of the scale.

High Resolution File

An image file that typically contains four pixels for every dot in the printed reproduction. High-resolution files are often linked to a page layout file, but not actually embedded in it, due to their large size.

Highlights

The lightest areas in a photograph or illustration.

HLS

Color model based on three coordinates: hue, lightness (or luminance), and saturation.

HSV

A color model based on three coordinates: hue, saturation and value (or luminance).

HTML (HyperText Markup Language)

The language, written in plain (ASCII) text using simple tags, that is used to create Web pages, and which Web browsers are designed to read and display. HTML focuses more on the logical structure of a page than its appearance.

Hue

The wavelength of light of a color in its purest state (without adding white or black).

Hyperlink

An HTML tag directs the computer to a different Anchor or URL (Uniform Resource Locator). The linked data may be on the same page, or on a computer anywhere in the world.

Hyphenation Zone

The space at the end of a line of text in which the hyphenation function will examine the word to determine whether or not it should be hyphenated and wrapped to the next line.

Icon

A small graphic symbol used on the screen to indicate files or folders, activated by clicking with the mouse or pointing device.

Illustrator

A vector editing application owned by Adobe Systems, Inc.

Image Map

Clickable Web graphic which is linked to another location, either within the web site, or to another online location.

Imaging

The process of producing a film or paper copy of a digital file from an output device.

Imagesetter

A raster-based device used to output a computer page-layout file or composition at high resolution (usually 1000 - 3000 dpi) onto photographic paper or film, from which to make printing plates.

Import

To bring a file generated within one application into another application.

Imposition

The arrangement of pages on a printed sheet, which, when the sheet is finally printed, folded and trimmed, will place the pages in their correct order.

Indexed Color Image

An image which uses a limited, predetermined number of colors; often used in Web images. See also GIF.

Indexing

In DTP, marking certain words within a document with hidden codes so that an index may be automatically generated.

Initial Caps

Text in which the first letter of each word (except articles, etc.) is capitalized.

Inline Graphic

A graphic that is inserted within a body of text, and may be formatted using normal text commands for justification and leading; inline graphics will move with the body of text in which they are placed.

Intensity

Synonym for degree of color saturation.

International Paper Sizes

The International Standards Organization (ISO) system of paper sizes is based on a series of three sizes A, B

and C. Series A is used for general printing and stationery, Series B for posters, and Series C for envelopes. Each size has the same proportion of length to width as the others. The nearest ISO paper size to conventional 8-1/2 x 11 paper is A4.

ISO

The International Standards Organization.

Jaggies

Visible steps in the curved edge of a graphic or text character that results from enlarging a bitmapped image.

Job state

The state of working in PressWise while one or more jobs are open. Opposite of no-job state.

JPG or JPEG

A compression algorithm that reduces the file size of bitmapped images, named for the Joint Photographic Experts Group, an industry organization that created the standard; JPEG is a "lossy" compression method, and image quality will be reduced in direct proportion to the amount of compression.

Justification

The alignment of text along a margin or both margins..

Kelvin (K)

Unit of temperature measurement based on Celsius degrees, starting from absolute zero, which is equivalent to -273 Celsius (centigrade); used to indicate the color temperature of a light source.

Kerning

Moving a pair of letters closer together or farther apart, to achieve a better fit or appearance.

Key (Black Plate)

In early four-color printing, the black plate was printed first and the other three colors were aligned (or registered) to it. Thus, the black plate was the "key" to the result.

Keyline

A thin, often black border around a picture or a box indicating where to place pictures. In digital files, the keylines are often vector objects while photographs are usually bitmap images.

Kilobyte (K, KB)

1,024 (210) bytes, the nearest binary equivalent to decimal 1,000 bytes. Abbreviated and referred to as K.

Knockout

A printing technique that represents overlapping objects without mixing inks. The ink for the underlying element does not print (knocks out) in the area where the objects overlap. Opposite of overprinting.

L*a*b

The lightness, red-green attribute, and yellow-blue attribute in the CIE Color Space, a three-dimensional color mapping system.

Landscape

Printing from the left to right across the wider side of the page. A landscape orientation treats a page as 11 inches wide and 8.5 inches long.

Laser printer

A high quality image printing system using a laser beam to produce an image on a photosensitive drum. The image is transferred to paper by a conventional xerographic printing process. Current laser printers used for desktop publishing have a resolution of 600 dpi. Imagesetters are also laser printers, but with higher resolution and tight mechanical controls to produce final film separations for commercial printing.

Layer

A function of graphics applications in which elements may be isolated from each other, so that a group of elements may be hidden from view, locked, reordered or otherwise manipulated as a unit, without affecting other elements on the page.

Layout

The arrangement of text and graphics on a page, usually produced in the preliminary design stage.

Leaders

A line of periods or other symbols connecting the end of a group of words with another element separated by some space. For example, a table of contents may consist of a series of phrases on separate lines, each associated with a page number. Promotes readability in long lists of tabular text.

Leading ("ledding")

Space added between lines of type. Usually measured in points or fractions of points. Named after the strips of lead which used to be inserted between lines of metal type. In specifying type, lines of 12-pt. type separated by a 14-pt. space is abbreviated "12/14," or "twelve over fourteen."

Letterspacing

The insertion or addition of white space between the letters of words.

Library

In the computer world, a collection of files having a similar purpose or function.

Ligature

Letters that are joined together as a single unit of type such as oe and fi.

Lightness

The property that distinguishes white from gray or black, and light from dark color tones on a surface.

Line Art

A drawing or piece of black and white artwork, with no screens. Line art can be represented by a graphic file having only one-bit resolution.

Line Screen

The number of lines per inch used when converting a photograph to a halftone. Typical values range from 85 for newspaper work to 150 or higher for high-quality reproduction on smooth or coated paper.

Linking

An association through software of a graphic or text file on disk with its location in a document. That location may be represented by a "placeholder" rectangle, or a low-resolution copy of the graphic.

Linotype-Hell

The manufacturer of imagesetters such as the Linotronic that process PostScript data through an external Raster Image Processor (RIP) to produce high resolution film for printing.

Lithography

A mechanical printing process used for centuries based on the principle of the natural aversion of water (in this case, ink) to grease. In modern offset

lithography, the image on a photosensitive plate is first transferred to the blanket of a rotating drum, and then to the paper.

Look Up Table

Frequently used for substituting colors from one color mode or color set with substitution colors from another.

Lossy

A data compression method characterized by the loss of some data.

Loupe

A small free-standing magnifier used to see fine detail on a page. See Linen Tester.

LPI

Lines per inch. See Line Screen.

Luminosity

The amount of light, or brightness, in an image. Part of the HLS color model.

LZW

The acronym for the Lempel-Ziv-Welch lossless data- and image-compression algorithm.

M, MB (Megabyte)

One million (1,048,576) bytes (220) or 1,024 Kilobytes.

Macro

A set of keystrokes that is saved as a named computer file. When accessed, the keystrokes will be performed. Macros are used to perform repetitive tasks.

Margins

The non-printing areas of page, or the line at which text starts or stops.

Mask

To conform the shape of a photograph or illustration to another shape such as a circle or polygon.

Masking

A technique that blocks an area of an image from reproduction by superimposing an opaque object of any shape.

Match Print

A color proofing system used for the final quality check.

Mechanical

A pasted-up page of camera-ready art that is to be photographed to produce a plate for the press.

Mechanical Dot Gain

See Dot Gain

Medium

A physical carrier of data such as a CD-ROM, video cassette, or floppy disk, or a carrier of electronic data such as fiber optic cable or electric wires.

Megabyte (MB)

A unit of measure of stored data equaling 1,024 kilobytes, or 1,048,576 bytes (1020).

Megahertz

An analog signal frequency of one million cycles per second, or a data rate of one million bits per second. Used in specifying computer CPU speed.

Menu

A list of choices of functions, or of items such as fonts. In contemporary software design, there is often a fixed menu of basic functions at the top of the page that have pull-down menus associated with each of the fixed choices.

Metafile

A class of graphics that combines the characteristics of raster and vector graphics formats; not recommended for high-quality output.

Method categories

Different ways in which a brush or effect interacts with the image file within Painter.

Metallic Ink

Printing inks which produce an effect of gold, silver, bronze, or metallic colors.

Midtones or Middletones

The tonal range between highlights and shadows.

Misregistration

The unwanted result of incorrectly aligned process inks and spot colors on a finished printed piece. Misregistration can be caused by many factors, including paper stretch and improper plate alignment. Trapping can compensate for misregistration.

Modem

An electronic device for converting digital data into analog audio signals and back again (Modulator-DEModulator.) Primarily used for transmitting data between computers over analog (audio frequency) telephone lines.

Moiré

An interference pattern caused by the out-of-register overlap of two or more regular patterns such as dots or lines. In process-color printing, screen angles are selected to minimize this pattern.

Monochrome

An image or computer monitor in which all information is represented in black and white, or with a range of grays.

Monospace

A font in which all characters occupy the same amount of horizontal width regardless of the character. See also Proportional Spacing.

Montage

A single image formed by assembling or compositing several images.

Mottle

Uneven color or tone.

Multimedia

The combination of sound, video images, and text to create a "moving" presentation.

Nested signatures

Multiple signatures that are folded, gathered, and placed one inside another, and then saddle-stitched at the spine.

Network

Two or more computers that are linked to exchange data or share resources. The Internet is a network of networks.

Neutral

Any color that has no hue, such as white, gray, or black.

Neutral density

A measurement of the lightness or darkness of a color. A neutral density of zero (0.00) is the lightest value possible and is equivalent to pure white; 3.294 is roughly equivalent to 100% of each of the CMYK components.

Noise

Unwanted signals or data that may reduce the quality of the output.

Non-breaking Space

A typographic command that connects two words with a space, but prevents the words from being broken apart if the space occurs within the hyphenation zone. See Hyphenation Zone.

Non-reproducible Colors

Colors in an original scene or photograph that are impossible to reproduce using process inks. Also called out-of-gamut colors.

Normal Key

A description of an image in which the main interest area is in the middle range of the tone scale or distributed throughout the entire tonal range.

Nozzle

In Painter, a small, loadable picture used by the Image Hose to paint .

Nudge

To move a graphic or text element in small, preset increments, usually with the arrow keys.

Object-oriented art

Vector-based artwork composed of separate elements or shapes described mathematically rather than by specifying the color and position of every point. This contrasts to bitmap images, which are composed of individual pixels.

Oblique

A slanted character (sometimes backwards, or to the left), often used when referring to italic versions of sans-serif typefaces.

Offset

In graphics manipulation, to move a copy or clone of an image slightly to the side and/or back; used for a drop-shadow effect.

Offset Lithography

A printing method whereby the image is transferred from a plate onto a rubber covered cylinder from which the printing takes place (see Lithography).

Opacity

1. The degree to which paper will show print through it. 2. Settings in certain graphics applications that allow images or text below the object whose opacity has been adjusted, to show through.

OPI

1. Acronym for Open Prepress Interface. 1. A set of PostScript language comments originally developed by Aldus Corporation for defining and specifying the placement of high-resolution images in PostScript files on an electronic page layout. 2. Incorporation of a low resolution preview image within a graphic file format (TIF, EPS, DCS) that is intended for display only. 3. Software device that is an extension to PostScript that replaces low-resolution placeholder images in a document with their high-resolution sources for printing.

Optical Disks

Video disks that store large amounts of data used primarily for reference works such as dictionaries and encyclopedias.

Output device

Any hardware equipment, such as a monitor, laser printer, or imagesetter, that depicts text or graphics created on a computer.

Overlay

A transparent sheet used in the preparation of multicolor mechanical artwork showing the color breakdown.

Overprint

A printing technique that lays down one ink on top of another ink. The overprinted inks can combine to make a new color. The opposite of knockout.

Overprint Color

A color made by overprinting any two or more of the primary yellow, magenta, and cyan process colors.

Overprinting

Allowing an element to print over the top of underlying elements, rather than knocking them out (see Knockout). Often used with black type.

Page Description Language (PDL)

A special form of programming language that describes both text and graphics (object or bit-image) in mathematical form. The main benefit of a PDL is that makes the application software independent of the physical printing device. PostScript is a PDL, for example.

Page Layout Software

Desktop publishing software such as PageMaker or QuarkXPress used to combine various source documents and images into a high quality publication.

Page Proofs

Proofs of the actual pages of a document, usually produced just before printing, for a final quality check.

PageMaker

A popular page-layout application produced by Adobe Systems.

Palette

An interface tool reminiscent of traditional artist' palettes. A collection of similar tools gathered into a "toolbox."

Panose

A typeface matching system for font substitution based on a numeric classification of fonts according to visual characteristics.

Pantone Matching System

A system for specifying colors by number for both coated and uncoated paper; used by print services and in color desktop publishing to assure uniform color matching.

Parallel fold

A folding method in which folds of a signature are parallel.

Pasteboard

In a page layout program, the desktop area outside of the printing page area, on which elements can be placed for later positioning on any page.

PCX

Bitmap image format produced by paint programs.

PDF (Portable Document Format)

Developed by Adobe Systems, Inc. (and read by Adobe Acrobat Reader), this format has become a de facto standard for document transfer across platforms.

Perfect binding

A binding method in which signatures are "ground off" at the spine of the book and then bound with adhesive, so each page is glued individually to the spine.

Perspective

The effect of distance in an image achieved by aligning the edges of elements with imaginary lines directed toward one to three "vanishing points" on the horizon.

Photoshop

The Adobe Systems image editing program commonly used for color correction and special effects on both the Macintosh and PC platforms.

Pi Fonts

A collection of special characters such as timetable symbols and mathematical signs. Examples are Zapf Dingbats and Symbol. See also Dingbats.

Pica

A traditional typographic measurement of 12 points, or approximately 1/6 of an inch. Most DTP applications specify a pica as exactly 1/6 of an inch.

PICT/PICT2

A common format for defining bitmapped images on the Macintosh. The more recent PICT2 format supports 24-bit color.

Pixel

Abbreviation for picture element, one of the tiny rectangular areas or dots generated by a computer or output device to constitute images.

PMS

See Pantone Matching System

PMT

Photo Mechanical Transfer - positive prints of text or images used for paste-up to mechanicals.

Point

A unit of measurement used to specify type size and rule weight, equal to (approximately, in traditional typesetting) 1/72 inch.

Polygon

A geometric figure consisting of three or more straight lines enclosing an area. The triangle, square, rectangle, and star are all polygons.

Portrait

Printing from left to right across the narrow side of the page. Portrait orientation on a letter-size page uses a standard 8.5-inch width and 11-inch length.

Positive

A true photographic image of the original made on paper or film.

Posterize, Posterization

The deliberate constraint of a gradient or image into visible steps as a special effect; or the unintentional creation of steps in an image due to a high LPI value used with a low printer DPI.

Postprocessing Applications

Applications, such as trapping programs or imposition software, that perform their functions after the image has been printed to a file, rather than in the originating application.

PostScript

1. A page description language developed by Adobe Systems, Inc. that describes type and/or images and their positional relationships upon the page. 2. An interpreter or RIP (see Raster Image Processor) that can process the PostScript page description into a format for laser printer or imagesetter output. 3. A computer programming language.

PostScript Printer Description file

See PPD.

PPD

Acronym for PostScript Printer Description, a file format developed by Adobe Systems, Inc., that contains device-specific information enabling software to produce the best results possible for each type of designated printer.

PPI

Pixels per inch; used to denote the resolution of an image.

Preferences

A set of defaults for an application program that may be modified.

Prepress

All work done between writing and printing, such as typesetting, scanning, layout, and imposition.

Prepress Proof

A color proof made directly from electronic data or film images.

Press sheet

In sheet-fed printing, the paper stock of common sizes that is used in commercial printing.

Primary Colors

Colors that can be used to generate secondary colors. For the additive system (i.e., a computer monitor), these colors are red, green, and blue. For the subtractive system (i.e., the printing process), these colors are yellow, magenta, and cyan.

Printer Command Language

PCL — a language, that has graphics capability, developed by Hewlett Packard for use with its own range of printers.

Printer fonts

The image outlines for type in PostScript that are sent to the printer.

Process colors

The four transparent inks (cyan, magenta, yellow, and black) used in four-color process printing. See also Color separation; CMYK.

Profile

A file containing data representing the color reproduction characteristics of a device determined by a calibration of some sort.

Proof

A representation of the printed job that is made from plates (press proof), film, or electronic data (prepress proofs). It is generally used for customer inspection and approval before mass production begins.

Proportional Spacing

A method of spacing whereby each character is spaced to accommodate the varying widths of letters or figures, thus increasing readability. Books and magazines are set proportionally spaced, and most fonts in desktop publishing are proportional. With proportionally spaced fonts, each character is given a horizontal space proportional to its size. For example, a proportionally spaced "m" is wider than an "i."

Pt.

Abbreviation for point.

QuarkXPress

A popular page-layout application.

Queue

A set of files input to the printer, printed in the order received unless otherwise instructed.

QuickDraw

Graphic routines in the Macintosh used for outputting text and images to printers not compatible with PostScript.

RAM

Random Access Memory, the "working" memory of a computer that holds files in process. Files in RAM are lost when the computer is turned off, whereas files stored on the hard drive or floppy disks remain available.

Raster

A bitmapped representation of graphic data.

Raster Graphics

A class of graphics created and organized in a rectangular array of bitmaps. Often created by paint software, fax machines, or scanners for display and printing.

Raster Image Processor (RIP)

That part of a PostScript printer or imagesetting device that converts the page information from the PostScript Page Description Language into the bitmap pattern that is applied to the film or paper output.

Rasterize

The process of converting digital information into pixels at the resolution of the output device. For example, the process used by an imagesetter to translate PostScript files before they are imaged to film or paper. See also RIP.

Reflective Art

Artwork that is opaque, as opposed to transparent, that can be scanned for input to a computer.

Registration

Aligning plates on a multicolor printing press so that the images will superimpose properly to produce the required composite output.

Registration Color

A default color selection that can be applied to design elements so that they will print on every separation from a PostScript printer. "Registration" is often used to print identification text that will appear outside the page area on a set of separations.

Registration marks

Figures (often crossed lines and a circle) placed outside the trim page boundaries on all color separation overlays to provide a common element for proper alignment.

Resolution

The density of graphic information expressed in dots per inch (dpi) or pixels per inch (ppi).

Retouching

Making selective manual or electronic corrections to images.

Reverse Out

To reproduce an object as white, or paper, within a solid background, such as white letters in a black rectangle.

RGB

Acronym for red, green, blue, the colors of projected light from a computer monitor that, when combined, simulate a subset of the visual spectrum. When a color image is scanned, RGB data is collected by the scanner and then converted to CMYK data at some later step in the process. Also refers to the color model of most digital artwork. See also CMYK.

Rich Black

A process color consisting of sold black with one or more layers of cyan, magenta, or yellow.

RIFF

Painter's native format. Stands for Raster Image File Format. Mostly interchangeable with Adobe Photoshop in terms of layers, paths, and modes. Offers composite and canvas options not supported by Photoshop.

Right Reading

A positive or negative image that is readable from top to bottom and from left to right.

Right-angle fold

A folding method in which any successive fold of a signature is at right angles to the previous fold.

RIP

See Raster Image Processor

ROM

Read Only Memory, a semiconductor chip in the computer that retains startup information for use the next time the computer is turned on.

Rosette

The pattern created when color halftone screens are printed at traditional screen angles.

Rotation

Turning an object at some angle to its original axis.

RTF

Rich Text Format, a text format that retains formatting information lost in pure ASCII text.

Rubylith

A two-layer acetate film having a red or amber emulsion on a clear base used in non-computer stripping and separation operations.

Saddle-stitching

A binding method in which each signature is folded and stapled at the spine.

Sans Serif

Sans Serif fonts are fonts that do not have the tiny lines that appear at the top of and bottom of letters.

Saturation

The intensity or purity of a particular color; a color with no saturation is gray.

Scaling

The means within a program to reduce or enlarge the amount of space an image will occupy by multiplying the data by a scale factor. Scaling can be proportional, or in one dimension only.

Scanner

A device that electronically digitizes images point by point through circuits that can correct color, manipulate tones, and enhance detail. Color scanners will usually produce a minimum of 24 bits for each pixel, with 8 bits each for red, green, and blue.

Screen

To create a halftone of a continuous tone image (See Halftone).

Screen Angle

The angle at which the rulings of a halftone screen are set when making screened images for halftone process-color printing. The equivalent effect can be obtained electronically through selection of the desired angle from a menu.

Screen Frequency

The number of lines per inch in a halftone screen, which may vary from 85 to 300.

Screen Printing

A technique for printing on practically any surface using a fine mesh (originally of silk) on which the image has been placed photographically. Preparation of art for screen printing requires consideration of the resolution of the screen printing process.

Screen Resolution

Monitors display resolution of digital files. Many monitors support multiple resolution modes. Standard screen resolution is 72 screen pixels per inch.

Screen Shot

A printed output or file that represents data from a computer monitor.

Screen Tint

A halftone screen pattern of all the same dot size that creates an even tone at some percentage of solid color.

SCSI

Small Computer Systems Interface, a standard software protocol for connecting peripheral devices to a computer for fast data transfer.

Selection

The act of placing the cursor on an object and clicking the mouse button to make the object active.

Self-Cover

A cover for a document in which the cover is of the same paper stock as the rest of the piece.

SEP

A PostScript file format created from PageMaker that can contain multiple pages as well as links in the form of OPI comments to high-resolution images, in color or in black and white.

Separation

See Color separation.

Serif

A line or curve projecting from the end of a letter form. Typefaces designed with such projections are called serif faces.

Service Bureau

A business that specializes in producing film for printing on a high-resolution imagesetter.

SGML

Standard Generalized Markup Language, a set of semantics and syntax that describes the structure of a document (the nature, content, or function of the data) as opposed to visual appearance. HTML is a subset of SGML (see HTML).

Sharpness

The subjective impression of the density difference between two tones at their boundary, interpreted as fineness of detail.

Shortcut

1. A quick method for accessing a menu item or command, usually through a series of keystrokes. 2. The icon that can be created in Windows95 to open an application without having to penetrate layers of various folders. The equivalent in the Macintosh is the "alias."

Silhouette

To remove part of the background of a photograph or illustration, leaving only the desired portion.

Skew

A transformation command that slants an object at an angle to the side from its initial fixed base.

Small caps

A type style in which lowercase letters are replaced by uppercase letters set in a smaller point size.

Smart Quotes

The curly quotation marks used by typographers, as opposed to the straight marks on the typewriter. Use of smart quotes is usually a setup option in a word processing program or page layout application

Snap-to (guides or rulers)

An optional feature in page layout programs that drives objects to line up with guides or margins if they are within a pixel range that can be set. This eliminates the need for very precise, manual placement of an object with the mouse.

Soft or Discretionary Hyphen

A hyphen coded for display and printing only when formatting of the text puts the hyphenated word at the end of a line.

Soft Return

A return command that ends a line but does not apply a paragraph mark that would end the continuity of the style for that paragraph.

Spectrophotometer

An instrument for measuring the relative intensity of radiation reflected or transmitted by a sample over the spectrum.

Specular Highlight

The lightest highlight area that does not carry any detail, such as reflections from glass or polished metal. Normally, these areas are reproduced as unprinted white paper.

Spine

The binding edge at the back of a book that contains title information and joins the front and back covers.

Spot Color

Any pre-mixed ink that is not one of or a combination of the four process color inks, often specified by a Pantone swatch number.

Spread

Two facing pages that can be worked on as a unit, and will be viewed side by side in the final publication.

Stacking Order

The order of the elements on a PostScript page, wherein the topmost item may obscure the items beneath it if they overlap.

Standard Viewing Conditions

A prescribed set of conditions under which the viewing of originals and reproductions are to take place, defining both the geometry of the illumination and the spectral power distribution of the light source.

Step-and-repeat

A layout in which two or more copies of the same piece are placed on a single plate. This is useful for printing several copies of a small layout, such as a business card, on a single sheet. Also called a multiple-up layout.

Stet

Used in proof correction work to cancel a previous correction. From the Latin; "let it stand."

Stochastic Screening
A method of creating halftones in which the size of the dots remains constant but their density is varied; also known as frequency-modulated (or FM) screening.

Stripping
The act of manually assembling individual film negatives into flats for printing. Also referred to as film assembly.

Stroke, Stroking
Manipulating the width or color of a line.

Stuffit
A file compression utility used in the Macintosh environment.

Style
A set of formatting instructions for font, paragraphing, tabs, and other properties of text.

Style Sheet
A file containing all of the tags and instructions for formatting all parts of a document; style sheets create consistency between similar documents.

Subhead
A second-level heading used to organize body text by topic.

Subscript
Small-size characters set below the normal letters or figures, usually to convey technical information.

Substitution
Using an existing font to simulate one that is not available to the printer.

Subtractive Color
Color which is observed when light strikes pigments or dyes, which absorb certain wavelengths of light; the light that is reflected back is perceived as a color. See CMYK and Process Color.

Superscript
Small characters set above the normal letters or figures, such as numbers referring to footnotes.

System Folder
The location of the operating system files on a Macintosh.

Tabloid
Paper 11 inches wide x 17 inches long.

Tagged Image File Format (TIFF)
A common format for used for scanned or computer-generated bitmapped images.

Tags
The various formats in a style sheet that indicate paragraph settings, margins and columns, page layouts, hyphenation and justification, widow and orphan control and other parameters.

Template
A document file containing layout and styles by which a series of documents can maintain the same look and feel.

Tessellation
A style of Mosaic using irregular bits of tile, glass or most commonly, pebbles, to create an image.

Text
The characters and words that form the main body of a publication.

Text Attribute
A characteristic applied directly to a letter or letters in text, such as bold, italic, or underline.

Text wrap
See Wrap

Texture
1. A property of the surface of the substrate, such as the smoothness of paper. 2. Graphically, variation in tonal values to form image detail. 3. A class of fills in a graphics application that give various appearances, such as bricks, grass, etc.

Thin Space
A fixed space, equal to half an en space or the width of a period in most fonts.

Thumbnails
1. The preliminary sketches of a design. 2. Small images used to indicate the content of a computer file.

TIFF
See Tagged Image File Format

Tile
1. A type of repeating fill pattern. 2. Reproduce a number of pages of a document on one sheet. 3. Printing a large document overlapping on several smaller sheets of paper.

Tint
1. A halftone area that contains dots of uniform size; that is, no modeling or texture. 2. The mixture of a color with white.

Tip In
The separate insertion of a single page into a book either during or after binding by pasting one edge.

Toggle
A command that switches between either of two states at each application. Switching between Hide and Show is a toggle.

Tracking
Adjusting the spacing of letters in a line of text to achieve proper justification or general appearance.

Transfer Curve
A curve depicting the adjustment to be made to a particular printing plate when an image is printed.

Transparency
A full color photographically produced image on transparent film.

Transparent Ink
An ink that allows light to be transmitted through it.

Trapping
The process of creating an overlap between abutting inks to compensate for imprecise registration in the printing process.

Trim
After printing, mechanically cutting the publication to the correct final dimensions. The trim size is normally indicated by marks on the printing plate outside the page area.

Trim page size
Area of the finished page after the job is printed, folded, bound, and cut.

TrueType
An outline font format used in both Macintosh and Windows systems that can be used both on the screen and on a printer.

Type 1 Fonts
PostScript fonts based on Bézier curves encrypted for compactness that are compatible with Adobe Type Manager.

Type Family

A set of typefaces created from the same basic design but in different weights, such as bold, light, italic, book, and heavy.

Typesetting

The arrangement of individual characters of text into words, sentences, and paragraphs.

Typo

An abbreviation for typographical error. A keystroke error in the copy.

UCR (undercolor removal)

A technique for reducing the amount of magenta, cyan, and yellow inks in neutral or shadow areas and replacing them with black.

Undertone

Color of ink printed in a thin film.

Unsharp Masking

A digital technique (based on a traditional photographic technique) performed after scanning that locates the edge between sections of differing lightness and alters the values of the adjoining pixels to exaggerate the difference across the edge, thereby increasing edge contrast.

Uppercase

The capital letters of a typeface as opposed to the lowercase, or small, letters. When type was hand composited, the capital letters resided in the upper part of the type case.

Utility

Software that performs ancillary tasks such as counting words, defragmenting a hard drive, or restoring a deleted file.

Variant

Variety of styles a brush may have. The Variants for a regular brush include the Oil Variant, Huge Rough Out Variant and Camel Hair Variant. A Pencil's Variants include a 2lb. Pencil , a 500lb. Pencil and Colored Pencils.

Varnish Plate

The plate used to apply a varnish after other colors have been applied.

Varnishing

A finishing process whereby a transparent varnish is applied over the printed sheet to produce a glossy or protective coating, either on the entire sheet or on selected areas.

Vector Graphics

Graphics defined using coordinate points, and mathematically drawn lines and curves, which may be freely scaled and rotated without image degradation in the final output. Fonts (such as PostScript and TrueType), and illustrations from drawing applications are common examples of vector objects. Two commonly used vector drawing programs are Illustrator and FreeHand. A class of graphics that overcomes the resolution limitation of bitmapped graphics.

Velox

Strictly, a Kodak chloride printing paper, but used to describe a high-quality black & white print of a halftone or line drawing.

Vertical Justification

The ability to automatically adjust the interline spacing (leading) to make columns and pages end at the same point on a page.

Vignette

An illustration in which the background gradually fades into the paper; that is, without a definite edge or border.

Visible Spectrum

The wavelengths of light between about 380 nm (violet) and 700 nm (red) that are visible to the human eye.

Watermark

An impression incorporated in paper during manufacturing showing the name of the paper and/or the company logo. A "watermark" can be applied digitally to printed output as a very light screened image.

Web Press

An offset printing press that prints from a roll of paper rather than single sheets.

White Light

Light containing all wavelengths of the visible spectrum.

White point

That pixel which is set as the brightest and whitest pixel in an image.

White Space

Areas on the page which contain no images or type. Proper use of white space is critical to a well-balanced design.

Window Shade

A type of text block used in certain applications, such as PageMaker. Windowshades have handles at the top and bottom which, when dragged with the mouse, will reveal or conceal text.

Wizard

A utility attached to an application or operating system that aids you in setting up a piece of hardware, software, or document.

WYSIWYG

An acronym for "What You See Is What You Get," (pronounced "wizzywig") meaning that what you see on your computer screen bears a strong resemblance to what the job will look like when it is printed.

X-height

The height of the letter "x" in a given typeface, which represents the basic size of the bodies of all of the lowercase letters (excluding ascenders and descenders).

Xerography

A photocopying/printing process in which the image is formed using the electrostatic charge principle. The toner replaces ink and can be dry or liquid. Once formed, the image is sealed by heat. Most page printers currently use this method of printing.

Zero Point

The mathematical "origin" of the coordinates of the two-dimensional page. The zero point may be moved to any location on the page, and the ruler dimensions change accordingly.

Zip

1. To compress a file on a Windows-based system using a popular compression utility (PKZIP). 2. A removable disk made by Iomega (a Zip disk) or the device that reads and writes such disks (a Zip drive).

Zooming

The process of electronically enlarging or reducing an image on a monitor to facilitate detailed design or editing and navigation.

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Student CD-ROM
MetaCreations Painter™ 6
A Digital Approach to Natural Art Media
Against the Clock

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- Windows 95/98 or NT 4.0
- 32 MB RAM (64+ MB recommended)
- Color display (24-bit recommended)
- CD-ROM drive

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To use the additional resources available on this CD-ROM, you will need to have the appropriate applications installed on your system and enough free space available if you copy the files to your hard drive. This product does not come with the application software required to use the data files on this CD-ROM.

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A DIGITAL APPROACH TO NATURAL ART MEDIA

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- Accompanying CD includes all graphic files needed for practice exercises
- Learning objectives provided at the beginning of each chapter
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Reviewer Quotes

"Painter is a robust, multilayered environment that has the potential to provide a wealth of creative possibilities for users. We think that it is wonderful that Against the Clock has developed a structured, effective course for mastering Painter's many facets. This series will provide a real head start for anyone with a computer who wants to extend their creativity to the monitor screen...and beyond."
(John Derry, Vice President, Creative Design and co-author of Painter)

"The Against the Clock course book presents clear step-by-step lessons for Painter 6. Students are able to easily navigate through the often overwhelming options in this deep and exciting program. The author has interrelated numerous functions within Painter, allowing students to explore its seemingly endless possibilities. As an instructor, I appreciate both the clarity and the thoroughness of this text."
(Betty Nelsen, Coordinator, Art New Media, American River College)

"The Against the Clock courseware for MetaCreations' Painter 6 uses a clear, easy-to-understand language and is ideal for the first-time Painter user and anyone wanting to master this digital art program. The illustrations and tips are accurate and helpful."
(Jeanne Hansen, Metropolitan Community College)

ISBN 0-13-018884-0
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9 780130 188847